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ABSTRACT

Presented is a bibliography of over 300 publications related to the application of the social sciences to various aspects of forestry. The major categories under which documents are classified involve social science as it applies to: (1) forestry in general; (2) forestry's productive agents; (3) forest production; (4) manufacturing; and (5) marketing, trade, and the demand for forest output. Each entry includes a brief abstract and listing of the author, date, source, and number of pages. Compiled documents are primarily from United States and foreign professional journals, and publication lists of United States Forest Service experiment stations. A subject index and author index are provided. (WB)

SOCIAL SCIENCES in FORESTRY

A CURRENT SELECTED BIBLIOGRAPHY

NO. 53 OCTOBER 1980

Cumulative Author Index for 1980

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SOCIAL SCIENCES IN FORESTRY

A Current Selected Bibliography

No. 53 October 1980

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SOCIAL SCIENCES IN FORESTRY

Subject-matter Classification Scheme

Note: This outline is regarded as working for the most part from the general to the specific. Material covering two or more sections of this outline is classified in the most general of these sections. Material which is classifiable in any of two or more sections is classified in the most specific of these sections. *Asterisks mark those subjects which are not represented in this issue.

I. SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

A. General principles, scope, content, method

B. History, status, prospects of forestry in an area, society in an area (This section includes material on forest resources alone, as opposed to that on consumer or intermediate resources alone, for which see appropriate sections.)

*1. General
2. United States, Canada
3. Other north-temperate nations
4. South-temperate nations
5. Nations in lower latitudes

C. Law, politics, policy, plan, program, and their administration

D. Other influences

1. Taxation

*a. General
*b. Property, general and special; severance; lieu payment
c. Income, inheritance, other

2. Valuation (See also IIIA5i)
*3. Insurance
4. Social interest, value system, custom, folklore, culture
*5. Characteristics of the individual
6. Public relations, other

E. Research (For research on specifc topics, see those topics.)

F. Professional and subprofessional affairs, education, employment of foresters

G. Social and economic development (See also IB)

H. Environmental concern

II. APPLIED TO FORESTRY'S PRODUCTIVE AGENTS
(See also the individual operation or type of output in III, IV, V)

A. Labor (Some material on labor will be found in IF, IV)

1. General, employment, demand
*2. Suppiy, union
3. Wage, cost hours, productivity, technology, training, return, benefit
4. Working condition, turnover, absenteeism, safety, insurance
*5 Characteristics of the worker

B. Owner, ownership, manager, entrepreneuer, holding (See also IC, IIC3)

1. General
2. Public

*a. General
b. Federal, central
c. Regional, local

3. Private

a. General
*b. Industrial
c. Nonindustrial

C. Land

*1. Context of supply, requirement, etc.
2. Description, use trend and status, interpreted description
3. Management, use prospect and plan, planning, marketing, tenure
*4. Research method

D. Capital

*1. General, investment, interest, finance
(For investment in forest production, see IIIE; for that in manufacturing, see IVA4)
2. Credit

III. APPLIED TO FOREST PRODUCTION (See also IIB, C)

A. Production including nontimber commodities and services

1. General, supply, multipurpose management
*2. Christmas trees, greens
*3. Range and livestock
*4. Naval stores, maple product
5. Recreation

a. General
b. Research
c. Decision
*d. Demand, consumer, market
e. Parks and wilderness areas
*f. Interpretation
g. Aesthetic values
h. Consumer activities such as driving, walking, camping, etc.
*i. Valuation

6. Water, soil, watershed management, shelterbelts
7. Wildlife, hunting, fishing
8. Urban forestry

B. Production chiefly of timber

1. General, supply
*2. Soil, site, site improvement
3. Tree regeneration and improvement; plantation
4. Intermediate cutting, pruning, stand improvement
5. Harvest cutting, rotation, cutting cycle, stocking, regulation, allowable cut
(For harvesting treated as engineering, see IVB)

*C. Roads, other forest-management transportation
(For transportation in harvesting, see IVB4; in manufacturing and marketing, VD)

D. Damage and protection

1. From fire
2. Prescribed burning
3. From insects

4. From other agencies
(For water damage and soil erosion, see IIIA6)

E. Decision making, planning, investment, accounting, inventorying
(For investment in general, see IID1)

IV. APPLIED TO MANUFACTURING
(For material on forestry in general, including forest land resources, see IID1)

A. The industry in general

1. Status and trend

*a. General
b. United States, Canada
c. Other north-temperate nations
d. South-temperate nations
e. Nations in lower latitudes

*2. Directory
(Includes those covering specific branches of industry.)
*3. History
4. Decision making, planning, investment, accounting, inventorying
(For a specific branch of industry, see that branch, "Operation of firm"; for investment in general, see IID1)

B. Timber-harvesting industry
(Includes roundwood in general; for specific types, see IVC, "raw material." For harvesting as silviculture, see IIIB4, 5)

*1. Status and trend
*2. Operation of firm
*3. Utilization of the stand or tree
(For utilization of a specific product, see the branch of industry in question.)

*a. General
*b. Logging residue and its disposal

4. Transportation (Skidding, yarding, loading, hauling to mill. For transportation in forest management, see IIIC; in manufacturing and marketing, see VD)

C. Wood-using industry

1. Lumber, allied product, pallet

*a. Industry status and trend
*b. Production, consumption, stocks, other statistics
(For sawtimber, see IB, IVB; for sawlogs, see IVC1d)
c. Operation of firm
*d. Raw material

2. Pulp, paper, board

a. Industry status and trend
*b. Operation of firm
c. Raw material
d. By-products

3. Veneer, plywood, panel

*a. Industry status and trend
*b. Operation of firm
*c. Raw material

4. Bark, chips other residue
(See also IVB3 and the industry branch in question, "Operation of firm.")
*5. Furniture
*6. Particleboard, hardboard, fibreboard, flakeboard
7. Construction
8. Charcoal, fuelwood, other combustibles; energy
*9. Other wood-using industry (including pole, piling, post, mine timber, railway tie)

D. Other forest industry

*1. Decorative product
*2. Naval stores
*3. Maple product
*4. Other

V. APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT
(For marketing and demand for productive agents, see II)

A. Demand (See also IF)

1. General; history of consumption; consumption-production relationships
2. Consumption or production prospect, goal, requirement, prediction (For material on short-term requirement, see the industry in question in IV, "Industry status and trend.")
*3. Consumer and his preference
(For material on specific forest resources, see also IIIA,B)

B. Market, marketing, trade, export, import

1. General
*2. Futures, hedging
3. Stumpage, log
4. Lumber, plywood, composition board
*5. Pulp,Paper, paperboard

a. Product
b. Raw material

6. Other wood products
*7. Christmas trees, greens
*8. Other type of output (See also IIC3)

C. Price, value

*1. General
*2. Stumpage, log
3. Other type of output
*4. Price reporting

*D. Transportation (Includes transportation in manufacturing.) (For transportation in forest management, see IIIC; in harvesting see IVB4)

454. 53 IA "Selected Papers of the 8th World Forestry Congress." FAO, Rome. (1978), In Chinese.

455. 53 IA "Special Readings in Conservation." FAO, Rome. Forest Resources Div. and Land and Water development Div. (1978), 112 pages. In English, Spanish, and French.

456. 53 IB2 BARRETT MICHAEL K., SHUPE DOROTHY G. Forest Area and Timber Resource Statistics for Colfax County, New Mexico, 1976. USDA Forest Service Resource Bulletin INT-18 (1980), 23 pages. Land area, commercial timberland area, timber inventory, and growth and mortality data.

457. 53 IB2 BARRETT MICHAEL K., SHUPE DOROTHY G. Forest Area and Timber Resource Statistics for San Miguel County, New Mexico, 1975. USDA Forest Service Resource Bulletin INT-17 (1980), 23 pages. Land area, commercial timberland area, timber inventory, and growth and mortality data.

458. 53 IB2 BOYCE STEPHEN G., KNIGHT HERBERT A. Prospective Ingrowth of Southern Hardwoods Beyond 1980. USDA Forest Service Research Paper SE-203. (1980), 33 pages. In contrast with a prospective decrease in the ingrowth of southern pine, prospective ingrowth for southern hardwoods is equal to or greater after 1980 than before. Investments in cultural practices to favor pines have not been as effective as the biological, social, and economic forces that favor hardwoods, especially on nonindustrial private forestlands. A rational response to these trends is to increase the use of hadwoods for marketable products.

459. 53 IB2 CONKIN MERLE E. "Findings from Industry's Recent Productivity Studies." Forest Farmer, Vol. 39. No. 9 (1980), pages 13, 24, 26. Opportunities will be lost without more intensive regeneration effort to offset increasing demand and shrinking forest land base.

460. 53 IB2 HEGG KARL M. Timber Resource Statistics for the Tuxedni Bay Inventory Unit, Alaska, 1971. USDA Forest Service Resource Bulletin PNW-88 (1979), 43 pages. Area and volume data from the first intensive inventory of a 180,000 acre unit on west side of Cook Inlet, 130 miles southwest of Anchorage. Commercial forest land totaled 45 thousand acres with a total cubic volume of 105 million feet. Major species is a hybrid of Sitka and White spruce.

461. 53 IB2 HYDE WILLIAM F., KRUTILLA JOHN V. "The Question of Development or Restricted Use of Alaska's Interior Forests." The Annals of Regional Science, Vol. 13, No. 1 (1979), 10 pages. Considers current public debate over allocation of interior Alaskan forests, focusing on the timber opportunity forgone if the land is placed in one of the restrictive use categories favored by conservationists.

462. 53 1B2 JAKES PAMELA J., RAILE GERHARD K. Timber Resource of Minnesota's Northern Pine Unit, 1977. USDA Forest Service Resource Bulletin NC-44 (1980), 54 pages. Fourth inventory of Minnesota's Northern Pine Unit shows a 28 percent increase in growing-stock inventory, but a 4 percent decrease in commercial forest area between 1962 and 1977. Statistical highlights and detailed tables of forest area, timber volume, growth, mortality, ownership, and use.

463. 53 IB2 MCCLURE JOE P. "Multiresource Inventories--A New Concept for Forest Survey in the Southeast." Selected Reprints from the 1979 Workshop on Forest Resource Inventories, Colorado State Univ. (July 22-27, 1979), pages 1-6. Key concepts of South Carolina pilot study which consists of a brief historical review showing why Forest Service Renewable Resource Units are capable of multiresource surveys and a practical approach to such surveys.

464. 53 1B2 MCCLURE JOE P., KNIGHT HERBERT A. "South Carolina's Forest Resources at a 'Turning Point.'" In, The Turning Point. South Carolina's Forestry Assoc. Annual Meeting. (1979), pages 12 and 13. An increase in pine volume in South Carolina over the past 10 years results from rapid growth of trees that seeded on abandoned fields. Future increases will depend upon efforts to reproduce pine after timber harvests.

465. 53 IB2 PETERSON R. MAX "Southern Forestry at Threshold of Most Promising Era." Forest Farmer, Vol. 39, No. 9 (1980), pages 8-9. Forest landowners need government economic policies that will stimulate their investments and produce adequate timber supply.

466. 53 1B2 POWELL DOUGLAS S., KINGSLEY NEAL P. The Forest Resources of Maryland. USDA Forest Service Resource Bulletin NE-61 (1980), 103 pages. Third forest survey (1975-1976) data: present status and trends in forestland area, timber volume, and annual growth and removals; timber products output by

forest industries, and importance of timber to Maryland's economy; outlook for timber supplies through 2006, forest mansgement opportunities in the stste, and the status and importance of nontimber forest resources.

467. 53 IB2 RESLER REXFORD A. "Forest Farming Opportunities for the '80s." Forest Farmer, Vol. 39, No. 9 (1980), pages 6-7. With timber demand and value increasing faster than overall economy, the U.S. South has best potential for gain.

468. 53 IB2 SHEFFIELD RAYMOND M. Forest Statistics for Northwest Florida, 1979. USDA Forest Service Resource Bulletin SE-52 (1980), 33 pages. Since fourth inventory (1969), area of commercial forestland has declined by over 266,000 acres and occupies 75 percent of the land area. Inventory of softwood and hardwood growing stock increased by 21 and 13 percent, respectively. Slash pine increased in volume by 43 percent. Net annual growth of growing stock totaled 236 million cubic feet, 43 percent more than annual timber removals.

469. 53 IB2 SHUPE DOROTHY G., BARRETT MICHAEL K. Forest Area and Timber Resource Statistics for Santa Fe County, New Mexico, 1975. USDA Forest Service Resource Bulletin INT-16 (1980), 24 pages. Land area, commercial timberland area, timber inventory, and growth and mortality data.

470. 53 IB2 SPENCER JOHN S. JR. "Status of Timber Inventories in the Northeastern Great Plains." In, Riparian and Wetland Habits of the Great Plains, Proc. of the 31st Annual Meeting Forestry Comm. Great Plains Agric. Council, Colorado State Univ. (1979), pages 37-42. Forest inventory data computer-updated to 1977 from earlier state surveys for North Dakota, eastern South Dakota, Nebraaka, and Kansas show a 20 percent gain in growing-stock volume since 1952, despite a 14 percent decline in commercial forest area. Condition of much of the commercial forest is poor.

471. 53 IB2 SPENCER JOHN S. JR., OSTROM ARNOLD J. Timber Resource of Minnesota's Aspen-Birch Unit, 1977. USDA Forest Service Resource Bulletin NC-43. (1979), 52 pages. Fourth inventory of Minnesota's Aspen-Birch unit ahows solid gains in growing-stock and sswtimber volumes between 1962 and 1977, but a 13 percent decline in commercial forest area. Statistical highlights and detailed tables of forest area as well as timber volume, growth, mortality, ownership, and use.

472. 53 IB2 STANLEY GEORGE W. "Industry's Supply Goals Challenge Southern Landowners." Forest Farmer, Vol. 39, No. 9 (1980), pages 14-15, 28. Rapid shift from western timber supply could exert pressure on southern forests too soon.

473. 53 IB2 An Assessment of the Forest and Range Land Situation in the United States. USDA Forest Service FS-345 (1980), 631 pages. Prepared by the Forest Service, US Dept. of Agriculture, for submission to Congress as required by the Forest and Rangeland Renewable Resources Planning Act of 1974 as amended by the National Forest Management Act of 1976. Submitted June 20, 1980.

474. 53 IB2 An Analysis of the Timber Situation in the United States 1952-2030. (Review Draft) USDA Forest Service (1980), 541 pages plus 5 appendices. Prospective trends in demands and supplies of timber; the economic, social, and environmental implications of these trends; the land and timber resource base; and the opportunities to manage and use this resource base to enhance the quality of life for present and future generations.

475. 53 IB3 BAUER E. "History of the Moselle-Hunsruck Forests (Bernkastel District)." Allegemeine Forst- und Jagdzeitung, Vol. 150, No. 7/8 (1979), pages 152-161. In German with English and French summaries. History of the region between the Moselle and Nahe rivers in W. Germany from Roman times to the present.

476. 53 IB3 BELL H. "The Forest Industry in the Region of the Moray Firth." Forestry, Vol. 53, No. 1 (1980), pages 81-90. Topography and climate, geology, soils, Forestry Commission woodlands, and private woodlands.

477. 53 IB3 BRENAC L. "The French National Forest Inventory." Revue Forestière Française, Vol. 31, No. 3 (1979) pages 253-267. In French with author and title listed in English, German, and Spanish.

478. 53 IB3 CHANG H.S. "Report to the Provincial Assembly on Agriculture and Forestry Progress, Taiwan." T'ai-wan Nung Yeh Chi K'an Taiwan Agric Q, Vol 14, No. 2 (1978), pages 1-19. In Chinese.

479. 53 IB3 EHRENREICH JOHN H. "Chinese Forestry and Forestry Education: An Overview." Journal of Forestry, Vol. 78, No. 8 (1980), pages 484-486. Much reforestation has been accomplished in the

People's Republic of China since 1956, and additional programs have recently been instituted. Forestry practices are considerably behind the times and efforts to modernize them are handicapped by lack of well-trained scientists and educators.

480. 53 IB3 ELKINGTON J. "A Treeless Britain." New Scientist, Vol. 78, No. 1098 (1978), pages 72-74. Report of the fourth conference in a series organized by the Lorsh Foundation covers: Loss of trees through disease, decline of private estates, replanting, timber importing, tree management.

481. 53 IB3 FARRELL E.P. "Swedish Forestry, A Question of Balance." Irish Forestry, Vol. 37, No. 1 (1980), pages 36-47. Growing stock in the Swedish forests has increased greatly over the past 50 years. A large increase in industrial productive capacity in recent years has given rise to concern over a possible wood shortage. After considerable debate the government adopted a policy of aiming to achieve a high level of productivity, while giving close consideration to environmental aspects and the public interest.

482. 53 IB3 GOWDY JAMES T. "Forestry in the German Democratic Republic." Journal of Forestry, Vol. 78, No. 5 (1980), Pages 283-284. Forestry in the German Democratic Republic is almost entirely government controlled and operated. Management is intensive, even-aged systems and artificial regeneration prevail. The need for steadily increased productivity is the foremost challenge.

483. 53 IB3 HOLMES G.D. "The Ecology of Even-aged Plantations: An Introduction to Forestry in Upland Britain." Quarterly Journal of Forestry, Vol. 74, No. 2 (1980), pages 73-81. The need for even-aged forests. Present structure, productivity, and history of upland forests in Britain.Rural land use and the prospects for more afforestation. Ecological changes and problems and the reconciliation of the needs of silviculture, environmental management, and operational efficiency. Importance of research and the need for sound knowledge of the forest ecosystem as a basis for management decisions.

484. 53 IB3 HSU W.F. "Agriculture and Forestry Report to the Provincial Assembly, 1978." T'ai-wan Nung Yeh Chi K'an Taiwan Agric Q, Vol. 14, No. 4 (1978), pages 1-11. In Chinese.

485. 53 IB3 HUEN-PU WANG "Nature Conservation in China:

The Present Situation." Parks, Vol. 5, No. 1 (1980), pages 1-10. Map and table identify vegetation regions of China and the locations of natural protected areas, province and geographic location, size, date of establishment, and main protected object of each area.

486. 53 IB3 HUMMEL FRED "Forestry in the European Communities." Allgemeine Forstzeitschrift, Munich, No. 1/2 (1980), pages 5-27. In German. Problems and objectives of forest policy in the EC and a concise survey of forestry, laws, and forest organization for the nine member states of the EC.

487. 53 IB3 JAN A. "Forestry in China." Pakistan Journal of Forestry, Vol. 28, No. 2 (1978) In English. Chinese projects: coastal plantings of Casuarina equisetifolia to control sand drifting, eucalyptus plantations on marginal and sub-marginal lands in S. China, and mulberry growing for wood and silkworm fodder.

488. 53 IB3 JOHNSTON D.R. "Forestry in China: I. Administration." Commonwealth Forestry Review, Vol. 59, No. 1 (1980), pages 41-52. About half of the forest area is controlled by the Ministry of Forestry, the other half by the communes and by Heilongjiang Province. Forest management and research suffered greatly as a result of the 1966 Cultural Revolution.

489. 53 IB3 KEMP RONALD H. "Forestry in China: II. A Commonwealth Connection." Commonwealth Forestry Review, Vol. 59, No. 1 (1980), pages 53-60. Farmland trees, villages and urban areas, agro-forestry in a commune in the Pearl River delta, a remnant of natural forest, activities of the provincial Forest Research Institute, as observed on a brief visit to the tropical zone of Guangdong Province.

490. 53 IB3 KREUTZER K., DAUBER E. "The Potential of Forest Exploitation in the Federal Republic of Germany." Forst wissenschaftliches Centralblatt, Vol. 99, No. 1 (1980), pagea 1-5. In German with an English summary. Roughly estimated values of residual and thinning reserves available on 7.2 million hectares.

491. 53 IB3 LINNARD W. The History of Forests and Forestry in Wales up to the Formation of the Forestry Commission. Thesis, Univ. of Wales, UK (1979), viii + 364 pages. The period from the last Ice Age to 1919, based on palynological and archaeological

evidence, classical literature, manuscripts, place-name evidence, field studies, and oral testimony.

492. 53 IB3 SIRAKOV KH. "Development of Forestry in Bulgaria over the Last Hundred Years." Nauchni Trudove, Vissh Lesotekhnicheski Institut, Sofiya (Gorsko Stopanstvo) No. 24 (1979), pages 9-15. In Bulgarian with summaries in Russian and German. Three stages of development since the Russo-Turkish war of 1877-78: The legislative stage, the organizational/instructional stage, and the economic/management stage.

493. 53 IB3 "Structural Data on Forestry in Baden-Wuerttemberg, 1978." Edited by Dept. for Nutrition, Agric. and Environment of Baden-Wuerttemberg, Stuttgart. (1980), 534 pages. In German. Statistical data of forest area and ownership, distribution of tree species, structure of ownership of private forests, forest recreation, and protective forests for the state, administrative and regional districts, counties and all communities in the state of Baden-Wuerttemberg.

494. 53 IB4 "South Africa's Commercial Timber Resources, 1977-78." South Africa, Dept. of Forestry. (1979), 87 pages. In English and Afrikaans. Ownership of plantations, new afforestation, roundwood sales, and the areas under hardwood and softwood species in each of 13 zones, in the Republic of South Africa as a whole, and in Transkei.

495. 53 IB5 ABDUL AZIZ BIN MOHD, ITHNAIN BIN ABDUL HAMID "Problems of Sustained Yield Management in Timber Deficit States with Particular Reference to Selangor." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 409-417. Silviculture and management background of the forests, regeneration problems, and suggested steps for improvement.

496. 53 IB5 CHAI LEO "Forest Resource Base, Policy and Legislation of Sarawak." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 311-327. Paper read at the seventh Malaysian Forestry Conference, Sept. 24-26, 1979 at Penang, covers: landuse policy; forest resources, management and silviculture; forest harvesting and utilization; forest economics and industries; conservation and environment; sustaining forest resources.

497. 53 IB5 CHONG PENG WAH "The Growing Domestic Demand for Timber and Its Influence on Forest Management." The Malaysian Forester, Vol. 42, No. 4 (1979),

pages 376-389. National position of Peninsular Malaysia as well as global situations.

498. 53 IB5 COLE N.H. AYODELE "The Gola Forest in Sierra Leone: A remnant Primary Tropical Rain-Forest in Need of Conservation." Environmental Conservation, Vol. 7, No. 1 (1980), pages 33-40. The Gola Forest is different from the common mature secondary forests situated elsewhere in the country, and as controlled exploitation of the forest reserve is now progressing, adequate conservation management is needed.

499. 53 IB5 COX F. Forestry Research and Development, Chile. Handbook on Instructions for and Design of Continuing National Forest Inventory of Manmade Forests. Working Document 17. FAO, Rome, Forestry Dept. (1979), 106 pages. In Spanish.

500. 53 IB5 DOUROJEANNI M.J. Integrated Rural Development in the Amazon Area of Peru with Special Reference to Forestry Activities. FAO, Rome, Forest Resources Div. (1979), pages 109-128. In Spanish.

501. 53 IB5 EREMEEV A.G. "Classification of the Forests of Cuba." Lesnoe Khozyaĭstvo, No. 4 (1979), pages 74-76. In Russian. Wood properties of various native tree species; density and hardness for eight species ; and distribution of the main tree species, by economic value, in the main forest formations.

502. 53 IB5 GALLOZZI A.C., ANDRADE G.D., COUTO H.T.Z. DO, BORGES M.H., LIMA O. DE S. "Forest Inventory of the State of São Paulo." Boletim Técnico, Instituto Florestal, São Paulo, No. 30. (1979), 26 pages. In Portuguese with an English summary. First part of the state forest inventory covering reforestation of the Socoroba Administrative Region and establishing a methodology for use in the entire inventory.

503. 53 IB5 GOODLAND ROBERT J.A. "Environmental Ranking of Amazonian Development Projects in Brazil." Environmental Conservation, Vol. 7, No. 1 (1980), pages 9-26. Includes ranking of possible utilization projects for the Amazonian tropical rain forest.

504. 53 IB5 HARDIE A.D.K. "Developments in the Western Caspian Forests of Iran." Commonwealth Forestry Review, Vol. 59, No. 1 (1980), pages 69-79. Lack of protection and management coupled with a dense stocking of grazing animals continues to cause

decline in forest area and density.

505. 53 IB5 HOENNINGER TH. "Silvicultural Aspects of the Philippines." Forstwissenschaftliches Centralblatt, Vol. 99, No. 1 (1980), pages 39-45. In German with an English summary. Lumber companies in the southern islands produce wood, oil (extracted from nuts), and cattle. This system has been adapted to the arid northern Philippines. Bureau of Forest Development and the College of Forestry are working on the problems of reforestation on those islands most affected by typhoons.

506. 53 IB5 HOYLE M.A. Forestry and Conservation in the Solomon Islands and the New Hebrides. Tigerpaper, FAO 5, No. 2 (1978), pages 21-24.

507. 53 IB5 KHATTAK G.M. "History of Forest Management in Bangladesh." Pakistan Journal of Forestry, Vol. 29, No. 3 (1979), pages 121-128.

508. 53 IB5 LANLY J.P., CLEMENT J. "Present and Future Natural Forest and Plantation Areas in the Tropics." Unasylva, Vol. 31, NO. 123. (1979), pages 12-20. By the year 2000 net removals from tropical forests should be 2.5 times those of 1975 and economic and population pressures, especially those for fuelwood, will cause local shortages.

509. 53 IB5 MAHMUD MOHD. DARUS BIN HAJI " Forest Resource Base, Policy and Legislation of Peninsular Malaysia." The Malaysian Forester, Vol.42, No. 4 (1979), pages 328-347. Paper read at the seventh Malaysian Forestry Conference Sept. 24-26, 1979 at Penang, covers: landuse policy; forest resources, management and silviculture; forest harvesting and utilization; forest economics and industries; conservation and environment; and sustaining the forest resource.

510. 53 IB5 MONTECINOS M., ARGANDONA P. Forestry Research and Development. Present Legislation on Forestry Resources in Chile. Working Document 18. FAO, Rome, (1979), 85 pages. In Spanish.

511. 53 IB5 MUNANG M. "Forest Resource Base, Policy and Legislation of Sabah." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 286-310. Paper read at the seventh Malaysian Forestry Conference, Sept. 24-26, 1979 at Penang, covers: landuse policy; forest resources, management and silviculture; forest harvesting and utilization; forest economics and industries; conservation and environment; sustaining the forest resource.

512. 53 IB5 MUTHOO M.K., LEADER T. Forestry Development and Research, Brazil. National Forest Policy Planning and Development - Technical Report 9. FAO, Rome, Forestry Dept. (1978), 41 pages.

513. 53 IB5 MYERS N. Tropical Moist Forests: We All Gain or Lose Together. IDRC Reports, Vol. 8, No. 3 (1979), pages 3-5. Logging damage in tropical moist forests caused by over-exploitation and clearing for cattle grazing; hydrological effects of deforestation, soil erosion and elimination of plant and animal species.

514. 53 IB5 NEGREIRIS O.C. "The Amazon Forest, A Critical Study." de Publ Inst Florestal (Sao Paulo), No. 14 (1978), pages 11-34. In Portuguese. Inventories, resource management, ecological aspects.

515. 53 IB5 SANTOS V. Rural Communities Participation in Forest Improvement in Mexico. FAO, Rome, Forestry Dept. (1979), 16 pages. In Spanish.

516. 53 IB5 SHEPHERD K.R., RICHTER H.V. Forestry in National Development: Production Systems, Conservation, Foreign Trade and Aid. Monograph, Development Studies Center, Australian National University, No. 17 (1979), 245 pages. Nineteen papers from an international conference held at Australian National Univ. in July 1978 to consider problems of forestry production in less developed countries.

517. 53 IB5 WIRADINATA S., SOEDERMA H., SOERIANEGARA I., MANAN S., COTO Z. "Forestry for Industrial and Rural Development in Indonesia: a Study on the Role of Forest Resources in the Long-Term Development of Indonesia." Bogor Agricultural University, Indonesia (1979), 168 pages. First part of a research study consisting of a literature review covering: forest resources; forest products (with special reference to pulp and paper projects); and soil and water conservation. Recommendations are made on subjects in need of further study, including details of 4 specific research projects in W. Java which will form the second part of the study (survey of fuelwood consumption and utilization in rural areas; evaluation of extension education in rural soil conservation; research on the economy and efficiency of different methods of terracing; management of the Ciliwung-Cisadane watershed above Jakarta.

518. 53 IB5 WYATT-SMITH J. "Agro-Forestry in the Tropics. A New Emphasis in Rural Development." Span, Vol.

22, No. 2 (1979), pages 65-67. Agro-forestry: sustainable land management system that increases overall production, combines crop production (including tree crops) and forest plants and/or animals simultaneously or sequentially, and applies management practices compatible with the cultural patterns of the local population. Examples from: Latin and Central America, Java, Nicaragua, Malaysia, Belize, Fiji, and Nigeria.

519. 53 IB5 ZOBEL B. "Timber Supply Trends in Latin America." Investigación Forestal, Colombia, No. 51 (1979), 15 pages. Tree Improvement Cooperative Program, North Carolina state Univ.,Raleigh, NC. Prospects for forestry expansion, wood production and export from Brazil, Venezuela, Chile and other Latin American countries. Excess of hardwood pulp is predicted unless fuel and chemical uses are developed. Future timber supplies from Latin America could be a significant factor in setting world timber and pulp practices.

520. 53 IB5 Republic of Colombia. Instituto Geográfico Agustín Codazzi-Bogotá La Amazonia Colombiana y sus Recursos. 5 vol. (1979) Geography, geology, soils, forests, wildlife, and socio-economic situation of the region. Includes recommendations in land use and management, maps and photos. Project started in 1972 in cooperation with the Dutch government.

521. 53 IB5 The World's Tropical Forests: A Policy, Strategy, and Program for the United States. Report to the President by a US Interagency Task Force on Tropical Forests.Dept. of State publication 9117 (1980), 53 pages. Three parts: (1) The forest resource - basis for concern.(2) International framework - mechanisms for action. (3) The U.S. role - response to need.

522. 53 IC ARSHAD AYUB "National Agricultural Policy and Its Implications on Forest Development in the Country." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 348-353.

523. 53 IC BAKER R.M. "Alternative Forestry - An Environmental Appraisal of British Forest Policy." Quarterly Journal of Forestry, Vol. 74, No. 2 (1980), pages 90-97. Current British forest policy is dominated by economic considerations which have resulted in a quasi-agricultural approach to forestry. Environmental problems may be anticipated from this approach where ecological factors are given a relatively minor role compared with that of

economics, when management decisions are made. Forestry may be practiced in accordance with ecological factors without abandoning economic considerations.

524. 53 IC BITTIG B. "Efficiency of Forest Policy." Ber Eidg Anstalt Forstl Vers, No. 190 (1978), pages 963-971. In German.

525. 53 IC BOUVAREL P., BOURGENOT L. "New Government Decisions on Forest Policy." Revue Forestière Française, Vol. 31, No. 3 (1979), pages 179-182. In French with English, German, and Spanish summaries. Due to the conclusions of the reports by the Bertrand De Jouvenel group and Meo-Betolaud, the French government decided to increase timber production and improve industrial processing and marketing.

526. 53 IC BOWMAN J.C. "A Forestry Strategy for Great Britain." In: A National Forest policy, proceedings of a conf. held June 7, 1979 by the Committee for the Environment and the Forestry Committee of Great Britain. London. (1979), pages 6-21. Preliminary report of a study coordinated by the Center for Agricultural Strategy. An annual planting rate of 60,000 ha (including restocking) is proposed to give a productive forest area of approx. 3.5 million ha by 2020-2030. Recommendations for increasing afforestation include: more use of partnership and land leasing between the Forestry Commission and landowners; an increase in advisory services to help landowners allocate land between agriculture and forestry; and more financial incentives to small landowners.

527. 53 IC DOMINGO I.M. "Public Participation in Planning and Decision-Making and Its Relevance to Philippine Forestry." Thesis (Master of Science), State Univ. of N.Y., Syracuse. FAO, Rome. (1978), 200 pages.

528. 53 IC GADANT J. "A View of Present Forest Policy." Revue Forestière Française, Vol. 31, No. 3 (1979), pages 167-178. In French. French forest policy, including recent legal and administrative developments.

529. 53 IC GOETZL ALBERTO, SIEGEL WILLIAM C. "Water Quality Laws in Southern States: How They Affect Forestry." Southern Journal of Applied Forestry, Vol. 4, No. 1 (1980), pages 2-11. Statutes and references, administering agencies, basic provisions, penalties for violation, significance for forest management, and related status for fourteen states.

530. 53 IC GREGERSEN H., HOUGHTALING T., RUBENSTEIN A. Economics of Public Forestry Incentive Programs: A Case Study of Cost-sharing in Minnesota. Agricultural Experiment Station, Univ. of Minnesota, Technical Bulletin 315. (1979), 65 pages. Results of an economic analysis of REAP-A7 cost-sharing: development of a method to evaluate forestry incentive programs; expost evaluation of effectiveness and efficiency of a specific program; discussion of application of the method and results in FIP and alternatives which need to be analyzed.

531. 53 IC HAIGH JOHN A., KRUTILLA JOHN V. Analysis of Fundamental Policy Directions: National Forest Management as an Illustrative Case. Washington, D.C., Resources for the Future. (1979), 51 pages. Interpretation of the Renewable Resources Planning Act as amended by the National Forest Management Act in a way that should provide internal consistency and coherence in Management philosophy.

532. 53 IC HEPBURN A. "The Possibility for Sustained Yield Management of Natural Forest in Sabah with Reference to the Sabah Foundation." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 400-408. Details of the Sabah Foundation, its license agreement for timber, and the possibility for sustained yield management of the natural forest in the license agreement area.

533. 53 IC KLEIN A. "New Forest Law for the Saar Territory." Recht Landwirtsch, Vol. 30, No. 4 (1978), pages 85-89. In German.

534. 53 IC LAVERACK M.D. "The Evolution of the Countryside Commission's Forestry Policy." In: A National Forest Policy, proceedings of a conf. held June 7, 1979 by the Committee for the Environment and Forestry Committee of Great Britain. London. (1979), pages 26-35. Countryside Commission's viewpoint: (1) major afforestation subject to planning control, (2) areas of scenic sensitivity to be the subject of management plans similar to those for national parks, (3) more emphasis on dispersed forestry integrated with agriculture and recreation, (4) planting an increased proportion of broadleaves, (5) more control over small-scale felling.

535. 53 IC MACLEOD JAMES G. "A Forester's Dilemma." Pulp and Paper Canada, Vol. 81, No. 7 (1980), pages 63-65. Governments must evaluate options before committing public funds to plantation forestry.

536. 53 IC MCNAUGHT J. KEITH, LORRAIN-SMITH ROY "Problems for a Hardwood Policy." Quarterly Journal of Forestry, Vol. 74, No. 2 (1980), pages 82-89. Successful forestry policy would have to institute measures to reverse the decline in planting rate, and to encourage retention of older size classes with uneven aged management systems.

537. 53 IC MIKHALIN I. YA, TOLOKONNIKOV V.B. "From the Five-Year Industrialization Plan to the Five-Year Plan of Efficiency and Quality." Lesnoe Khozyaĭstvo, No.4 (1979), pages 11-17. In Russian. Role of forestry in Soviet planning in each of the successive five-year plans since the 1920s. General development and improvement in economic forest planning in recent years.

538. 53 IC MOHAMAD BIN JAMIL "Plantation Forestry-Vehicle for Rural Development." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 354-364. FLDA (Felda program), a land settlement and development program, and the possibilities for a Felda system of forest plantation development.

539. 53 IC NODINE STEPHEN K., MARSINKO ALLAN Impacts of the Soil Bank's Conservation Reserve Program on Forestry in South Carolina. Dept. of Forestry Forest Research Series No. 32, Clemson Univ. (1979), 39 pages. Of 357,805 acres originally planted to trees under the program, an estimated 297,908 acres are still a part of the state's forest land base. Timber from this land has the potential to produce $5.88 billion of manufactured goods, and to provide 93,716 man-years of employment over a rotation period of 40 years.

540. 53 IC PALOSUO V.J. "MERA Programs in Finnish Forestry." Acta Forestalia Fennica No. 165 (1979), 55 pages. Origin of the MERA I (1965-70) and the work of the Forestry Financing Committee in preparing the second and third programs (1966-75). Forest policy in Finland during the 60s and 70s and results of the program.

541. 53 IC SOARES P.M., CASTRO R. DeP., AMARAL R., FERREIRA R.J.F. "Directives for Brazilian Forestry Policy, 1979-1985." In Coleção: Desenvolvimento e planejamento florestal. Série: Estudos perspectivos para o período 1979 à 1985. Brasília, Min. Agric. (1979), 29 pages. In Portuguese. Forestry accounts for 6% of GNP in Brazil. Need for restatement and realignment of forest policy and assessment of obstacles to development. Afforestation rate of over half a million ha per year (pines and

eucalypts) is proposed and average productivity is to be raised. Increased eficiency of wood use, exploitation of social benefits of afforestation, etc. Separate policy to be devised for Amazonia which will emphasize the importance of preservation and conservation of that region.

542. 53 IC WORSLEY M. "Can We Afford to Waste Our Trees?" Chartered Surveyor, Vol. 3, No. 8 (1979), pages 334-335. Need for a comprehensive UK forest policy.

543. 53 IC An Appraisal of Forest Policy from the Sawmill Point of View. Paris: Fédération Nationale de Bois. (1980), 13 pages. In French.

544. 53 IC Miscellaneous Public Lands, National Forest and Park Related Proposals. Hearing before the Subcommittee on Parks, Recreation, and Renewable Resources of the Comm. on Energy and Nat. Resources. U.S. Senate, Ninety-sixth Congress. (1979), 135 pages.

545. 53 IC Timber Harvest Scheduling Study: Six Rivers National Forest. USDA, Forest Service, Pacific Southwest Region. (1979), 312 pages. Federal options to mitigate economic and social impacta of Redwood National Park expansion.

546. 53 IC The 1980 Report to Congress on the Nation's Renewable Resources. USDA Forest Service FS-347 (1980), 155 pages. Divided into three parts: (1) Recommended program, including role of the forest service and pertinent laws and policies; the program; and effects on the environment. (2) Assessment in the categories of forest and rangeland, recreation, wilderness, wildlife and fish, timber, water, mineral-bearing land, etc. (3) Program development divided into developing the alternatives, involving the public, and developing the recommended program; and alternative programs.

547. 53 IDIC BRIGGS CHARLES W., CONDRELL WILLIAM K. Tax Treatment of Timber, Under Pertinent Sections of the Internal Revenue Code of 1954, as Amended. Forest Industries Committee on Timber Valuation and Taxation. (Sixth edition, 1978), 112 pages. Provisions of the Internal Revenue Code of 1954 which accord capital gains treatment to the cutting and disposal of timber under a contract which retains in the seller an economic interest in such timber.

548. 53 IDIC BRIGGS CHARLES W., CONDRELL WILLIAM K. "Tax Treatment of Timber, under Section 631 and Other Pertinent Sections of the Internal Revenue Code of

1954, as Amended." Timber Tax Journal, Vol. 14, No. 1 (1978), pages 1-112. Sixth edition of Tax Treatment of Timber. Concerned primarily with those provisions of the Internal Revenue Code of 1954 which accord capital gains treatment to the cutting of timber (section 631(a)) and to the disposal of timber under a contract which retains in the seller an economic interest in such timber (section 631 (b)).

549. 53 IDIC GENT FREDERICK G. "Tax Reform: Possible Impact on Public Timber Purchasers." Timber Tax Journal, Vol. 14, No. 1 (1978), pages 133-136. Any change in the basic capital gains structure which makes second-class investors out of those who take major, long-term risks in timber growing or who invest in improved utilization of a valuable natural resource, would render the smaller members of the industry incapable of competing with the larger members who could better absorb losses.

550. 53 IDIC OLSON SCOTT C., HANEY HARRY L. JR. "The Impact of State Death Taxes on the Private Nonindustrial Forest Landowner in the South." Southern Journal of Applied Forestry, Vol. 4, No. 2 (1980), pages 88-94. Combined federal and state death tax levies are computed for assumed conditions of family status and asset size. Potential tax saving under special-use valuation for simulated estates.

551. 53 IDIC POSTLEWAITE PHILIP F. "Timber Capital Gains - The Option Rule of Section 631(b)." Timber Tax Journal, Vol. 14, No. 1 (1978), pages 113-132. Review of the case law dealing with the application of section 631(b) to timber cutting options, the legislative history and tax policy of section 631(b), and the judicial attitude regarding such agreements prior to the enactment of section 631. Supports the conclusion that the courts, and consequently the I.R.S., have been unduly restrictive in interpreting the disposal requirement of section 631(b). Option agreements meet the requirements of this section, and gains derived from such disposals of timber should receive capital gains treatment, provided the other requisites of section 631(b) are met.

552. 53 IDIC SHIRLEY A.RAY "Capital Gains Impact on the Third Forest." Timber Tax Journal, Vol. 14, No. 1 (1978), pages 137-141. History and role of Section 631.

553. 53 IDIC SIEGEL WILLIAM C. "Federal Income and Death Taxes - Implications for the Noncorporate Forest Landowner." In,The Impact of Change on the Management of Private Forest Lands in the Northwest,

Proc. Northwest Priv. For. Forum. (1978), pages 53-56. Income tax laws as they apply to timber sales are explained, as are new provisions for estate and gift taxes.

554. 53 ID1C WELLMAN BRADFORD S. "Current Tax Issues Affecting Forestry and Estate Planning." Forest Farmer, Vol. 39, No. 9 (1980), pages 18,31-34. Although it is too early to predict success of a tax cut bill, several proposals have been offered. Congress is studying revision of inheritance tax rules.

555. 53 ID2 BOCHERT H. "Base Values as an Aid to the Calculation of Stand Values: A Proposal for the Simplification of Practical Forest Valuation." Forstarchiv, Vol. 50, No. 10 (1979), pages 205-212. In German. Proposed method of valuation: base values reflect combined characteristics of the stand as regards quality and d.b.h. with separate base values calculated for sawlog value, pulpwood value and harvesting costs. Base values are then multiplied by variable factors (prices, costs and tax) to give the net revenue per cubic meter of merchantable wood.

556. 53 ID2 KROTH WERNER "Theoretical Elements of Forest Valuation." Allgemeine Forstzeitschrift, Munich, No. 20 (1980), pages 526-527. In German. Valuation theories and the question of the rate of interest in forest valuation.

557. 53 ID2 KURIMURA T. "Expectation Value of Forest Land: The Theory and Its Application." Tottori Daigaku Nogakubu Kenkyu Hokoku Bull Fac Agric Tottori Univ. Vol. 30 (1978), pages 138-159. In Japanese.

558. 53 ID2 KURIMURA T. "The Relationship between Private Economic Value and Social Benefit in the Valuation of Forests." Tottori Daigaku Nogakubu Kenkyu Hokoku Bull Fac Agric Tottori Univ, Vol. 31 (1979), pages 228-236. In Japanese.

559. 53 ID4 Cultural Research Reference Book. USDA, Forest Service (1979), 286 pages. Guidebook for managing cultural resources (remains of sites, structures, or objects used by man in the past) on National Forests in Region 9.

560. 53 ID6 HENDEE JOHN C., SMITH ZANE G., LAKE ROBERT M. "Public Involvement in Resource Decisions: RARE I and II and Their Implications for the Future." In Multiple-Use Management of Forest Resources. Proc.

Symp. Clemson Univ. (1979), pages 217-232. Experience with public involvement in RARE I and RARE II indicates that multiple use decision making on Federal lands requires managers with well-developed public involvement skills. Public input is required in various stages of decion making, and in each case the ways in which comments will be used should be defined. Thereafter, considerable skill is required in analyzing and evaluating public comments as well as in collecting them.

561. 53 IE CHEN C.M. "A Study of Timber Resource Mangement Research Work." Technicl Bulletin of the Experimental Forest and Department of Forestry, National Taiwan University, No. 123. (1979), pages 1-22. In Chinese with an English summary. Literature published in Taiwan and foreign countries on problems related to timber resource management systems was reviewed in order to examine the problems and research priorities.

562. 53 IE EVANS PETER A. Directory of Selected Forestry-related Bibliographic Data Bases. USDA Forest Service General Technical Report PSW-34. (1979), 42 pages. 117 bibliographic data bases maintained by scientists of the USDA Forest Service. Information for each data base: name of the data base; originator; date started; coverage by subject, geographic area, and size of collection; Base format; retrieval format; ways to query; whom to query, and availability. Four indices: subject, originator, geographic coverage, and Forest Service and other locations.

563. 53 IE GAJO P. "The State of Research in Forest Economics." Riv Econ Agrar, Vol. 34, No. 1 (1979), pages 127-130. In Italian.

564. 53 IE MUSTANOJA K.J. "Development of the Forest Research Institute, Chittagong, Bangladesh. Planning, economics, and Statistics." FAO, Rome. (1978), 49 pages.

565. 53 IE SALLEH MOHD NOR "A Change Towards Developmental Research in Foreatry." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 423-429. Early forestry research emphasized collection, and classification. This was followed by experimentation with provenance trials, species trials, wood and timber investigations. Scarcity of future resources and pressures of the social and economic environment present new dimensions to research priorities and promote developmental research.

566. 53 IE "Wood Research Report 1978." Edited by German Society for Wood Research, Munich. (1980), 180 pages. In German. Review of research done in 1972-77 and a summary of 88 studies on timber production and wood consumption finished in 1978.

567. 53 IF ASHLEY BURL S. Reference Handbook for Foresters. USDA, Forest Service (1980), 35 pages.

568. 53 IF DE STEIGUER J.E., MERRIFIELD R.G. "The Impact of the Environmental Era on Forestry Education in North America." Unasylva, Vol. 31, No. 123. (1979), pages 21-25. Rapid expansion of environmental course offerings seems to have ended in North American forestry schools. But the environmental era has probably made a permanent mark on forestry education.

569. 53 IF GUILLARD J.P. Review of the Conclusions and Recommendations of the Eighth World Forestry Congress. FAO, Rome, Forestry Dept. (1979), pages 91-95. In English, Spanish and French.

570. 53 IF JUNGST STEVEN F., COLLETTI JOE P. "Forest Management Instruction with Computer Assistance and Role Playing." Journal of Forestry, Vol. 78, No. 8 (1980), page 472. An interactive computer program has been combined with an introductory laboratory problem in an effort to stimulate student interest in and awareness of benefits of computer usage in forestry problems.

571. 53 IF KURTH H., HARZMANN L.J. "Education and Research in Tropical Forestry at the Forestry Section of the Dresden Polytechnic Institute as a Means of Developing Forestry and Timber Industries in Tropical Countries." Beiträge für die Forstwirtschaft, Vol. 13, No. 3 (1979), pages 86-91. In German with Russian and English summaries. Graduate education and research program in tropical forestry and research objectives in tropical forestry and forest products carried out at Tharandt and abroad.

572. 53 IF LYNCH DENNIS L., CREWS DONALD L. "Students Need a Proper Introduction to Forestry." Journal of Forestry, Vol. 78, No. 4 (1980), pages 206-207. In an attempt to improve the balance between forestry graduates and job openings, an introductory course has been developed at Colorado State University to clarify professional requirements and opportunities.

573. 53 IF MOSQUEIRA C. Forestry Development, Paraguay. Report of the Refresher Seminar for the New Staff of

the National Forestry Service. Working Document 16. FAO, Rome. (1979), 24 pages. In Spanish.

574. 53 IF NISSAN A.H. "University Education for the Paper Industry." Tappi, Vol. 63, No. 7 (1980), pages 26-28. Industry needs the products of universities (graduates and research results) and is duty-bound to help solve university problems. Industry is entitled to demand from the universities and their graduates, excellence in quality, breadth, depth of knowledge of special value to industry and a well-rounded education.

575. 53 IF Report of the Ninth Session of the FAO Advisory Committee on Forestry Education. FAO, Rome, Forestry Dept. (1978), 141 pages. In Spanish, English, and French.

576. 53 IG ADEYOJU S.K. Participation of Population in Local Community Development Activities. FAO, Rome, Forestry Dept. (1979), 30 pages. In Spanish.

577. 53 IG BOTERO L.S. Incentives for the Integration of Community in Forestry Planning and Conservation in Latin America. FAO, Rome, Forest Resources Div. (1979), pages 1-28. In Spanish.

578. 53 IG CONTRERAS A. Planning of Forestry Projects for Rural Communities Development in Latin America. FAO, Rome, Forest Reaources Div. (1979), pages 151-159. In Spanish.

579. 53 IG PAVERI ANZIANI M. Forestry Activities as Factors of Rural Communities Development in Latin America. FAO, Rome, Forest Resources Div. (1979), pages 129-150. In Spanish.

580. 53 IG Annex to the Report of the FAO/SIDA Seminar on the Role of Silviculture in Rural development of Latin America. FAO, Rome, Forest Resources Div. (1979), 193 pages. In Spanish.

581. 53 IC Forestry for Local Community Development. FAO Forestry Paper 7, Rome. (1978), 114 pages. Nature and extent of forestry at the community level, and problems and possibilities that arise. Policies, programs necessary for developing forestry activities for the benefit of rural communities and technical considerations.

582. 53 IG Forestry for Rural Communities. FAO Forestry Dept. (undated), 56 pages. Appropriate forestry; rural people's needs for forests; foreatry systems; community forestry (policies and projects); advancing rural forestry.

583. 53 IG Report of the FAO/SIDA Seminar on the Role of Silviculture in Rural Development of Latin America. FAO, Rome, Forest Resources Div. (1979), 48 pages. In Spanish.

584. 53 IG "Implementing Forestry Programs for Local Community Development." FAO, Rome. Forestry Dept. (1978), 25 pages. In English, Spanish, and French.

585. 53 IH CHAMBERS A. "Toward a Synthesis of Mountains, People, and Institutions." Landscape Planning, Vol. 6, No. 2 (1979), pages 109-126. Four problems identified from two environmental issues: subalpine logging, range management, hydro-electric development, and aboriginal lifestyle. Basic problem lies in human behavior and a dichotomy between the structure of natural systems and the structure of society.

586. 53 IH GOLDSMITH EDWARD "World Ecological Areas Program (WEAP): A Proposal." Environmental Conservation, Vol. 7, No. 1 (1980), pages 27-29. Revised program to save the world's remaining tropical forests now takes into account related current short-term economic and political issues.

587. 53 IH GUPPY NICHOLAS G.L. "Some Crucial Issues of Our Time." Environmental Conservation, Vol. 7, No. 1 (1980), pages 3-8. By protecting tribal peoples and respecting their land rights; world-wide destruction of the environment in undeveloped regions, particularly of tropical forest, can be avoided.

588. 53 IH HOLLIDAY F.G.T. "Nature Conservation and Forestry." In: A National Forest Policy, proceedings of a conf. held June 7, 1979 by the Committee for the Environment and the Forestry Committee of Great Britain. London. (1979), pages 41-48. Reconciling forestry and nature conservation interests including ways of increasing species diversity in plantation forests.

589. 53 IIA1 GREIG PETER "Employment Coefficients for Forestry Planning and Management." Australian Forestry, Vol. 42, No. 3 (1979), pages 181-189. Employment coefficients estimated for forestry and wood manufacturing firms in Victoria, and logging in Australia. A change of 10,000 cubic meters per year in the net volume of sawlogs will result in a long run change of 4.1 jobs in logging, 11.2 jobs in sawmilling, and 1.2 jobs in forest management. A

change of 100,000 recreational visitor days per year will result in a long run change of 4.4 jobs in recreation management, and a smaller change in jobs in the recreation service industry.

590. 53 IIA1 MACKO FERDINAND "Contribution to the Analysis of the Development of the Labor Force in Forestry of the SSR." Lesnícky Časopis, Vol. 26, No. 1 (1980), pages 45-57. In Czech with an English abstract. Analysis of collectives and development of social structures of forest workers. Disproportion between the positive tendencies in the living standards of forest workers and the slow quality improvement of their social structure may be solved by social analysis.

591. 53 IIA3 NAKASHIMA Y. "The Productive Behavior of a Forestry Work Group in Southern Kyushu Region II. Loyalty, Satisfaction, Motivation, and Productivity." Bull Fac Agric Univ Miyazaki, Vol. 25, no. 2 (1978), pages 361-368.

592. 53 IIA3 NAKASHIMA Y. "The Productive Behavior of a Forestry Working Group in Southern Kyushu Region I. Major Concepts and Hypotheses." Bull Fac Agric Univ Miyazaki, Vol. 25, No. 1 (1978), pages 55-61.

593. 53 IIA3 WHITE DAVID E. Manpower Training in Eastern Forest Industry: A Review and Assessment. USDA Forest Service Research Paper NE-453. (1980), 20 pages. Most training takes place on the job and is more effective in sawmilling than in logging. An upgrading of pay and working conditions might attract workers of higher quality, thus reducing the need for training. There is an increasing need for training of mechanics and managers.

594. 53 IIA4 BARDY D.A. "Practical Approach to Safety in Forestry Operations." FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. Seminar on Accidents in Forestry Operations. Poland. (1978), 15 pages. In English with summaries in English and French.

595. 53 IIA4 BUTORA V. "Methods of Research into the Causes of Accidents in Forestry Operations." FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. Seminar on Accidents in Forestry. Poland. (1978), 12 pages. In French with summaries in English and French.

596. 53 IIA4 DUPUIS M. "An Accident-Prevention Policy in the Forestry Sector." Revue Forestiere Francaise, Vol. 31, No. 4 (1979), pages 312-317. In French with author and title listed in English, German, and

Spanish.

597. 53 IIA4 FIBIGER W. "Some General Aspects of Research Methods into Accidents." FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. Seminar on Accidents in Forestry Operation. Poland. (1978), 13 pages. In English with summaries in English and French.

598. 53 IIA4 PETTERSSON B., AGER B. "Increased Safety in Forestry - A Program of Action for Industry." FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. Seminar on Accidents in Forestry Operations, Poland. (1978), 7 pages. In English with summaries in English and French.

599. 53 IIA4 TEIKARI E. "Job Satisfaction among Forest Workers." Julkaisuja, Työtehoseura, Helsinki, No. 208 (1979), 110 pages. In Finnish with summary in English. Of six occupational groups interviewed, job satisfaction was lowest among fellers. Mechanization of forest work, although found to increase psychological stress, is considered important in decreasing physical strain, health hazards and accident risks.

600. 53 IIB1 BERGER E.P. "The Ownership Structure of the Forests of the Netherlands." Nederlands Boshouw Tijdschrift, Vol. 50, No. 5 (1978), pages 146-149. In Dutch. Data on total forest area and size of units owned hy the state, local authorities, nature conservation, private individuals, etc. for the whole country and its regions. Total area in public ownership and ownership of nature conservation organizations shows a strong upward trend.

601. 53 IIB1 CHRISTIANSEN P.H. Forestry Cooperatives at Community Level. Three Case Studies: Mexico, Guatemala, Honduras. FAO, Rome, Forest Resources Div. (1979), pages 29-107. In Spanish.

602. 53 IIB1 MOHAPATRA C.H. "The Role of Forest Corporations in Indian Forestry." Beiträge für die Forstwirtschaft, Vol. 13, No. 3 (1979), pages 92-94. In German with Russian and English summaries. Historical background and economic and social aims of state forest corporations which combine the advantages of state and private enterprise and the functions of harvesting, industrial development, primary processing and marketing, and the development of plantations and other forestry activities.

603. 53 IIB2B National Forest Land Ownership: Some Questions and Answers. USDA, Forest Service.

(1980), 16 pages.

604. 53 IIB2B National Forest Management Act Regulations. U.S. Congress, Senate, Comm. on Energy and Natural Resources No. 96-29. (1979), 174 pages.

605. 53 IIB2B Your Rights and Benefits under the Forest Service Relocation Assistance Program. USDA Forest Service, USGPO Stock Number 001-001-00499-5. (1979), 21 pages. Relocation services and payments for people displaced as a result of the acquisition of their land for a federal project.

606. 53 IIB2C BARRETT JAMES P. "Recreational and Timber Opportunities on Swiss and German Town Forests." Forest Notes, No. 140 (1980), pages 2-5. Values of town forests of Switzerland and Germany and the possibility of establishing town forests in the U.S.

607. 53 IIB2C BERNETTI G. "Planned Management of Publicly Owned Forests." Montanaro d'Italia - Monti e Boschi, Vol. 30, No. 1 (1979), pages 49-58. In Italian with an English summary. Methods and objectives of management outlays and plans by central or regional authorities of communal and other village forests, which make up nearly one third of total forest land in Italy.

608. 53 IIB3A MOHAMED DAHAN BIN ABDUL LATIFF "The Role of the Private Sector in Forest Management and Utilization." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 390-399. Historically the public sector has been responsible for forest management while the private sector handled utilization. Recently, a new policy in which only a few manage part of the nation's forest resource has been in effect.

609. 53 IIB3A NORMANDIN D. "Structural Development of French Forests from 1910 to 1970." Revue Forestière Française, Vol. 31, No. 3 (1979), pages 234-252. In French with author and title listed in English, German, and Spanish. Analysis of how the distribution of private forest properties by area classes has developed.

610. 53 IIB3A Impact of Change on the Management of Private Forest Lands in the Northwest. USDA Forest Service. Proc. Northwest Private Forestry Forum. (1979), 86 pages.

611. 53 IIB3C BRØGGER P. "The 25,000 Small Woodlands of Jutland Could Be Better Utilized." Hedeselskabets

Tidsskrift, Vol. 100, No. 7 (1979), pages 144-145. In Danish. Small-scale survey in Birkeback district showed one third of small woodlands were managed well and one third weren't managed at all. Area contains considerable reserves of fuelwood.

612. 53 IIB3C HEEREMAN C. FREIHERR "Combining Agriculture and Forestry: A Possible Future." Allgemeine Forstzeitung, No. 19 (1979), pages 499-501. In German. Ownership and income significance of farm woodlands in the German Federal Republic; difficulty of using softwoods from small private woodlands; organization of labor, cultivation and marketing; limits to state assistance through the forest service; improved training and further education.

613. 53 IIB3C MADIGAN G., JONES A.R.C. "Provincial Assistance to Private Forest Owners in Eastern Canada- a Survey." The Forestry Chronicle, Vol. 56, No. 3 (1980), pages 104-108. To determine the effectiveness of private forestry assistance programs in Ontario, Québec, New Brunswick, and Nova Scotia, a study was conducted among rural residents, members of woodlot owner associations, and extension forestry personnel.

614. 53 IIB3C MCCURDY DWIGHT R., VITELLO JOHN "Owners of Large, Private Forested Tracts in the Shawnee Hills of Illinois." Journal of Forestry, Vol. 78, No. 4 (1980), pages 211-212. A majority of owners of large tracts in the Shawnee Hills of Illinois are practicing forestry or are interested in doing so. Since these owners control much of the forest in the region, they should be given priority in programs for increasing timber production from nonindustrial private forests.

615. 53 IIB3C MINCKLER LEON S. Woodland Ecology, Environmental Forestry for the Small Owner. (second ed.) Syracuse, N.Y. Syracuse Univ. Press. (1980), 241 pages. Overview of the ecological, economic, and social considerations of woodland management and ownership. Timber, wildlife, recreation, aesthetics, watershed, and fuelwood forestry; as applied primarily to the eastern United States.

616. 53 IIB3C STONE ROBERT N. "The Small Woodland Owner." In, Small Woodland Owners Conference. Dept. of Natural Resources, Div. of Forestry, St. Paul, Minnesota. (1978), pages 16-18.

617. 53 IIC2 COLEMAN ALICE "The Place of Forestry in a

Viable Land-Use Strategy." Quarterly Journal of Forestry, Vol. 74, No. 1 (1980), pages 20-29. Maps of the Second Land Utilization Survey of Britain provide an inventory of unproductive land where forestry could expand with little or no disturbance to agriculture, water conservation, wildlife interests, landscape amenity or recreational land use. Total potentially afforestable area proves to be nearly one million hectares in England and Wales alone.

618. 53 11C2 FIORAVANTI-MOLINIÉ A., LAMARCHE H. "Stock-farming, Reforestation and Tourism in a Deserted Mountain Area. The Case of Barre-des-Cévennes." Études Rurales, No. 71/72 (1978), pages 159-185. In French with an English summary. Various modifications in the local social structure will lead to changes in the production system and consequently to changes in the land use pattern.

619. 53 11C3 DWYER JOHN F., BAUMGARTNER DAVID C. The Market for Forest and Associated land in Southern Illinois: Implications for Land Management. USDA Forest Service Research Paper NC-175. (1979), 7 pages. Market for forest and associated land in two southern Illinois counties and implications for land management.

620. 53 11D2 Forestry Loan Act of 1979: Hearings before the Subcommittee on Conservation and Credit and Forests. Ninety-sixth U.S. Congress. House. Committee on Agriculture; No. 96-R (1979), 257 pages.

621. 53 111A1 CARROLL M.R. Multiple Use of Woodlands. Dept. of Land Economy, Univ. of Cambridge, UK. (1978), 135 pages. Influences on the decisions regarding woodland uses within a land unit are measured and analyzed under the headings: ownership, environment, economics, and social factors.

622. 53 111A1 LAU BUONG TIING "The Effects of Shifting Cultivation on Sustained Yield Management for Sarawak National Forests." The Malaysian Forester, Vol. 42, No. 4 (1979), pages 418-422. Effects of shifting cultivation on the general economy and welfare of the people, long term effects on the management of national forests, and possible solutions to the problem.

623. 53 111A1 MIEGROET M. VAN "Theory of Forest Management with Reference to Concepts of the Natural and Socal Sciences." Management in Multiple Use Forestry. IUFRO meeting Div. 1 (Forest Environment

and Silviculture), No. 124. (1978), pages 25-40. In German.

624. 53 IIIA1 WYATT-SMITH J. Training and Research in Multiple-Use Forest Management, the Philippines. Management Research of Philippine Diptocarp Forest. Working Paper 14. FAO, Rome, Forestry Dept. (1979), 156 pages.

625. 53 IIIA5A ITTNER RUTH Recreational Impact on Wildlands. USDA, Forest Service, Pacific Northwest Region. (1979), 341 pages.

626. 53 IIIA5A LUCAS ROBERT C. "Perception of Non-Motorized Recreational Impacts: A Review of Research Findings." In: Recreational Impact on Wildlands, Conf. Proc. Oct. 27-29, 1978. (1979), pages 24-31. Studies reviewed indicate visitors' perception of recreational impacts is limited. Management of recreational impacts on wildlands must be based mainly on: (1) professional recognition of long-term consequences of impacts; and (2) legal and policy goals that set standards for acceptable impact levels.

627. 53 IIIA5A SAUNDERS PAUL RICHARD "Results of a Multiresource Inventory: Analysis of Undeveloped Rural Recreation Sites in South Carolina." Selected Reprints from the 1979 Workshop on Forest Resource Inventories, Colorado State Univ. (July 22-27, 1979), pages 43-51. Recreation use or potential for recreation examined in a random sample over a large area using survey plots.

628. 53 IIIA5B ROMSA GERALD H. "Recreation Research and Planning in the Federal Republic of Germany: A Commentary." Leisure Sciences, Vol. 3, No. 3 (1980), pages 257-275. Rapidly growing participation in outdoor recreation activities within densely populated areas has led to refined procedures for evaluating land-use potential and distributing recreation facilities with a view to environmental constraints.

629. 53 IIIA5B SCHREYER RICHARD "Survey Research in Recreation Management - Pitfalls and Potentials." Journal of Forestry, Vol. 78, No. 6 (1980) pages 338-340. While studies of recreation users are numerous, applications of findings are not. Understanding recreation behavior as an experience can increase the utility of survey information. Where decisions may be controversial, survey research will not identify which decision should be made, but may reveal the implications of alternative decision

options.

630. 53 IIIA5C CLARK ROGER N., STANKEY GEORGE H. The Recreation Opportunity Spectrum: A Framework for Planning, Management, and Research. USDA Forest Service General Technical Report PNW-98 (1979), 32 pages. Six physical, biological, social, and managerial factors that can be utilized by managers to develop recreation opportunities or by recreationists to obtain diverse experiences.

631. 53 IIIA5E BURY RICHARD L., FISH C. BEN "Controlling Wilderness Recreation: What Managers Think and Do." Journal of Soil and Water Conservation, Vol. 35, No. 2 (1980), pages 90-93. Increased use throughout the National Wilderness Preservation System has produced congestion and related problems that threaten the ecosystems and the socio-psychological qualities of people's wilderness experience. As use continues to increase so will the level of control on the intensity and character of visitor use.

632. 53 IIIA5E DAVIS GEORGE D. "The Case for Wilderness Diversity." American Forests, Vol. 86, No. 8 (1980), pages 24-27, 60-63. Position for representative ecosystems as opposed to recreation potential as a means for deciding which land will be preserved as wilderness.

633. 53 IIIA5E FIGHT ROGER D. Roadless Area-Intensive Management Tradeoffs on Western National Forests. USDA, Forest Service (1978), 57 pages.

634. 53 IIIA5E LABASTILLE ANNE Wildland Conservation in Central America. Wildlands and Watershed Management Unit Natural Renewable Resources Program CATIE, Costa Rica (1978), 37 pages. Publication also available in Spanish. The Wildlands and Watershed Unit within the Natural Renewable Resources Program at CATIE (Centro Agronómico Tropical de Investigación y Enseñanza) in an effort to prevent environmental damage, assists the governments of the Central American Isthmus in the management of their natural and cultural resources.

635. 53 IIIA5E MANN D.L., NELSON J.G. "Ideology and Wildlands Management: The Case of Rondeau Provincial Park, Ontario." Environmental Management, Vol. 4, No. 2 (1980), pages 111-123. Critical examination of basic concepts that have guided management of parks and related reserves.Vague or general concepts such as wilderness or preservation should be strongly complemented by precise statements

of objectives, a learning attitude, and experimentation and research. As a result of the technical uncertainties and value judgements frequently involved, management should also be based upon the expressed preferences and continuing involvement of citizens.

636. 53 IIIA5E STANKEY GEORGE H. A Comparison of Carrying Capacity Perceptions Among Visitors to Two Wildernesses. USDA Forest Service Research Paper INT-242 (1980), 34 pages. Visitors to lightly and heavily used wilderness areas had common images of wilderness in a general sense. Those in the heavily used area were more tolerant of higher use, more likely to define the area as overused, and more willing to accept use controls.

637. 53 IIIA5E VRESTIAK P. "Park Forests in the System of Recreational Green Areas." Zahradnictvo, Vol. 3, No. 6 (1978), pages 284-285. In Slovak.

638. 53 IIIA5E River of No Return Wilderness Proposals. U.S. Congress, Senate, Comm. on Energy and Natural Resources No. 96-30. (1979), 5 pages.

639. 53 IIIA5G ELSNER GARY H., SMARDON RICHARD C. Proceedings of Our National Landscape: A Conference on Applied Techniques for Analysis and Management of the Visual Resource. USDA Forest Service General Technical Report PSW-35. (1979), 752 pages. 104 papers: (a) current and future challenges to the visual resource, (b) available technology for solving landscape planning problems, (c) appropriate combinations of technology and problems.

640. 53 IIIA5G HODGSON RONALD W., THAYER ROBERT L. JR. "Implied Human Influence Reduces Landscape Beauty." Landscape Planning, Vol. 7, No. 2 (1980), pages 171-179. Implied landscape meaning or significance can influence judgements of relative landscape beauty even when no other variables except meaning change.

641. 53 IIIA5G LITTON R. BURTON JR., TETLOW ROBERT J. A Landscape Inventory Framework: Scenic Analyses of the Northern Great Plains. USDA Forest Service Research Paper PSW-135. (1978), 83 pages. Set of four visual inventories of the Northern Great plains designed to document scenic resources for varied scales of application, and based on: (1) study of previously developed landacape analysis methods and their terminology; (2) examination of high altitude imagery and topographic maps as sources of visual information; (3) field observations in the Northern Great Plains. Criteria include visual characteristics

and patterns of land forms, vegetation cover, water, and land use.

642. 53 111A5G PROPST DENNIS B., BUHYOFF GREGORY J. "Policy Capturing and Landscape Preference Quantification: a Methodological Study." Journal of Environmental Management, Vol. 11, No. 1 (1980), pages 45-59. Policy Capturing, a potential methodology for evaluating landscape preference, is described and tested with scenes from the Blue Ridge Parkway. Methodlogical problems concerning use of policy capturing for landscape assessment, along with practical management applications.

643. 53 111A5G TOWLER R. W. "What Future for Upland Amenity Woodlands?" Quarterly Journal of Forestry, Vol. 74, No. 1 (1980), pages 7-20. Present forestry and agricultural incentives in U.K. do not take adequate account of amenity woodlands which are of little use for commercial forestry but are important for environmental conservation.

644. 53 111A5G WILLIAMSON DENNIS N., CALDER STUART W. "Visual Resource Management of Victoria's Forests: a New Concept for Australia." Landscape Planning, Vol. 6, No. 3,4 (1979), pages 313-341. Forests Commission of Victoria, Australia is adapting a syscem developed by the United States Forest Service for managing scenic resources of forest landscapes. Social significance, historic background, and geographic setting of the project, initial activities involved in the establishment of the procedure and an explanation of the Visual Management System.

645. 53 111A5G YONEKAWA M., HADA T. "Fundamental Studies on Scenic Forests: Structure of the Landscape in Moun tain Paths of Daisen National Park." Tottori Daigaku Nogakubu Kenkyu Hokoku Bull Fac Agric Tottori Univ, Vol. 30 (1978), pages 134-137. In Japanese.

646. 53 111A5H GIBBS KENNETH C. "Public Campgrounds: Are They Profitable?" Journal of Forestry, Vol. 78, No. 8 (1980), pages 466-468. Detailed cost analysis of 111 USDA Forest Service campgrounds in the Pacific Northwest. Campers are currently being subsidized $12 million in taxes annually in this region. Cost implications of four possible management goals reflecting varying levels of subsidization.

647. 53 111A5H HAMMITT WILLIAM E., CHEREM GABRIEL J. "Photographic Perceptions as an On-Site Tool for Designing Forest Trails." Southern Journal of Applied Forestry, Vol. 4, No. 2 (1980), pages

94-97. Two photographic methodologies that provide forest resource managers with a tool for incorporating hiker perceptions and preferences into trail designs.

648. 53 IIIA5H LAPAGE WILBUR F., COLE GERALD L. National Camping Market Survey. USDA Forest Service Research Paper NE-450 (1979), 34 pages. Estimates size of the potential camping market and divides it into three segments: families with a high, medium, or low potential for entering the camping market. Developed camping market is divided into active and inactive segments. Regional distribution and characteristics of each segment.

649. 53 IIIA5H LEONARD R.E., ECHELBERGER H.E., PLUMLEY H.J., VANMETER L.W. Management Guidelines for Monitoring Use on Backcountry Trails. USDA Forest Service Reaearch Note NE-286. (1980), 20 pages. Six techniques for monitoring use of backcountry trails and practical information about site suitabilities, inatallation and maintenance requirements, equipment costs, and data analysis conaiderations of each monitoring system.

650. 53 IIIA5H "Camping in Forests." Allgemeine Forstzeitschrift, Munich, No. 25 (1980), pages 639-663. In German. Special issue containing articles about camping recreation in forests, especially tent camps for youths.

651. 53 IIIA6 FEDOTOV V. "Forest Shelterbelts: Their Effectiveness (in the Moldavia SSR)" Sel'sk Khoz Mold, Vol. 7 (1978), page 28. In Russian.

652. 53 IIIA6 MEGAHAN WALTER F., CHIMA AMJAD M. "Watershed Management in Pakistan - Past, Present, and Future." Journal of Forestry, Vol. 78, No. 4 (1980), pages 217-219. Past and present land use has seriously impaired the hydrologic function of most upland areas in Pakistan. Damages from flooding, erosion, sedimentation, and loss of productivity have created a crisis situation.

653. 53 IIIA7 DEGRAAF R.M. Proceedings of the Workshop: Management of Southern Foresta for Nongame Birds, January 24-26, 1978, Atlanta, Georgia. USDA Forest Service General Technical Report SE-14 (1978), 175 pagea.

654. 53 IIIA7 REAM CATHERINE H. "Human-Wildlife Conflicts in Backcountry: Possible Solutions." In: Recreational Impact on Wildlands, Conf. Proc., Oct. 27-29, 1978. (1979), pages 153-163. Wildlife is

increasingly threatened by growing numbers of backcountry recreationists and diminishing wildlands. Possible solutions to be used individually or in combination: people management (spatial, temporal, and behavioral); wildlife management, in the sense of modifying wildlife behavioral responses to certain recreational activities; and habitat modification to affect the spatial distribution of wildlife.

655. 53 IIIA7 Wildlife Habitat Management for the National Forests in West Virginia. USDA, Forest Service. (1979), 30 pages.

656. 53 IIIA8 ALBRECHT J., WEICHERDING P.J. Urban Forestry: A Bibliography. Agricultural Experiment Station, Univ. of Minnesota Misc. Publication 1-1980 Forestry Series 31 (1980), 100 pages. Revision of Bibliography Series No. 3 published by the Forestry Library in 1977. Topics: urban forestry in contemporary society; social, economic, and physical benefits from urban forests; culture and protection of the urban forest; planning and managing the urban forest; urban forestry programs and research; bibliographies and general works on urban forestry.

657. 53 IIIA8 AMES RICHARD G. "The Sociology of Urban Tree Planting." Journal of Arboriculture Vol. 6, No.5. (1980), pages 120-123. Study of the aggressive tree planting program of Oakland, California shows that sociological factors may be more important than biological factors in determining tree survival in an urban setting.

658. 53 IIIA8 CORDELL H. KEN, CLEMENTS THOMAS W. "Urban Waste Wood: A National Perspective." In, Urban Waste Wood Utilization, Proc. of a Conference on Alternatives to Urban Waste Wood Disposal.USDA Forest Service General Technical Report SE-16. (1979), pages 3-13. Large amounts of metropolitan solid wastes are produced each year in the US. Wood waste is vastly underutilized. In the future, recovery and reuse of wood waste will become a more viable and attractive option. Comprehensive study of the resource and alternative programs of utilization are needed.

659. 53 IIIA8 HAGER BARBARA C., CANNON WILLIAM N. JR., WORLEY DAVID P. "Street Tree Policies in Ohio Towns." Journal of Arboriculture, Vol. 6, No. 7 (1980), pages 185-191. Fourteen small-to-medium-size Ohio towns were visited to determine their street tree policies and programs. Trees were assessed for species, size, density, and general condition. Towns with long-term, well-founded

programs had more kinds of trees in better condition, more consistent and greater density, and a more balanced distribution of sizes.

660. 53 IIIA8 Urban Waste Wood Utilization: Proceedings of a Conference on Alternatives to Urban Waste Wood Disposal. USDA Forest Service General Technical Report SE-16 (1979), 127 pages. Five papers on the resource situation, nine papers on possibilities for utilization, and three papers on planning.

661. 53 IIIB1 BRUCE J. "Why We Must Produce More Timber." In: A National Forest Policy, proceedings of a conf. held June 7, 1979 by the Committee for the Environment and the Forestry Committee of Great Britain. London (1979), pages 58-69. Economic arguments for increasing timber production in Britain by the year 2000, especially of material used in pulping, particleboard and other reconstituted woods which will probably increase from 45 percent (19 to 75 percent of the British industrial wood consumption.

662. 53 IIIB1 JACKSON DAVID H. The Microeconomics of the Timber Industry. Colorado: Westview Press (1980), 136 pages. A theory of timber production and supply considering both short-term market speculation and long-term timber supply. Defines the marginal conditions requisite to efficient timber production in differing circumstances throughout the life of the stand, and describes the competitive advantage of the private firm in an industry composed of a private sector and an untaxed public sector.

663. 53 IIIB1 KHITRINA G.S. "Differentiated Management in Forestry." Lesnoĭ Zhurnal, No. 2 (1979), pages 125-127. In Russian. A study of possible ways of improving the organizational structure of forestry, taking into account the level of utilization achieved and the intensity at which forestry is practiced, Sverdlovsk region (Central Urals) as an example.

664. 53 IIIB1 O'DRISCOLL J. "The Importance of Lodgepole Pine in Irish Forestry." Irish Forestry, Vol. 37, No. 1 (1980), pages 7-22. Classification, paleohistory, distribution, discovery, pattern of seed imports and planting, productivity, research, utilization, and plans for the future.

665. 53 IIIB1 THOMPSON BRUCE Black Walnut for Profit, A Guide to Risks and Rewards. Timber Press (new edition) (1979), 285 pages. Reference book devoted to shortening the length of time from

planting to harvest.

666. 53 IIIB1 YANG Y.C., LIN W.L. "The Study of Present and Potential Productivity of Forest Resources by Us ing Timber Resource Analysis System Techniques." Quarterly Journal of Chinese Forestry, Vol. 13, No. 1 (1980), pages 1-42. In Chinese with an English summary. If the sampling design of the forest survey is suitable and the data on radial growth is normal, this method could be applied in the Taiwan forest survey and be as effective as that applied in the U.S.

667. 53 IIIB1 Forest Industries Council Forest Productivity Report. National Forest Products Association. (1980), 66 pages. Major recommendations: (1) establish a national timber productivity goal that recognizes long-term growing cycles inherent in forestry and manage the nation's commercial forest land to achieve efficient, continuing levels of productivity. (2) establish a favorable economic and sociopolitical investment climate through taxes, assistance and funding, communication, planning and cost control, reduced regulation.

668. 53 IIIB1 Timber Supply: Issues and Options. Proceedings No. P-79-24 Forest Products Research Society, (1979), 218 pages. Papers from conference held in San Francisco, Oct. 2-4, 1979. Topics: Defining the issues, Timber resources in the U.S., Current and projected U.S. timber and wood-use situation by region, Outlook for imports in the supply picture, Domestic timber supply -an overview of constraints, Timber supply issues, Supply effects of improved utilization.

669. 53 IIIB3 BERRY M.J., MUSGRAVE K.D. Reforestation and Erosion Control, Haiti. Qualitative and Quantitative Study of the Evolution of Forest Cover between 1956-58 and 1977. Technical Report 2. FAO, Rome, Forestry Dept. (1978), 33 pages. In French.

670. 53 IIIB3 BOONSONG LEKAGUL, MCNEELY J.A. "Thailand Launches Extensive Reforestation Program." FAO Tigerpaper, Vol. 5, No. 1 (1978), pages 9-13. Estimates of consumption of wood and wood products. Program to plant 320,000 ha of forest each year, establishment of forest villages and fuelwood plantations, and the encouragement of agrisilviculture.

671. 53 IIIB3 DELWAULLE J. C. "Forest Plantations in Dry Tropical Africa." Bois et Forets des Tropiques, No. 187. (1979), pages 3-30. In French with

abstracts in English and Spanish. Fourth in a series of articles, this one considers the choice of species to be planted.

672. 53 IIIB3 LAAKKONEN OLAVI Optimal Distribution of Regional Seedling Production by Nurseries: An Economic Study. Commun. Inst. For. Fenn. Vol. 95, No. 5 (1979), pages 1-32. Study to minimize combined costs of seedling production and transportation in order to divide market demand for seedlings between nurseries within a region.

673. 53 IIIB3 ZAKHARIEV B. "Afforestation in Bulgaria." Nauchni Trudove, Vissh Lesotekhnicheski Institut, Sofiya (Gorsko Stopanstvo) No. 24 (1979), pages 17-23. In Bulgarian with summaries in Russian and German. Prior to 1944, afforestation in Bulgaria was primarily undertaken as a protection against erosion and flooding. Since 1944, afforestation has increased, 1.2 million ha were afforested between 1947-1975.

674. 53 IIIB3 North Carolina State University-Industry Cooperative Tree Improvement Program. School of Forest Resources, North Carolina state Univ. (1980), 63 pages. Statistics on land-management, regeneration, and tree-improvement activities of the program; demand for seedlings.

675. 53 IIIB4 CHEN CHUNG M., ROSE DIETMAR W., LEARY ROLFE A. How to Formulate and Solve "Optimal Stand Density over Time" Problems for Even-Aged Stands Using Dynamic Programming. USDA Forest Service General Technical Report NC-56 (1980), 17 pages.

676. 53 IIIB5 CHANG S.J. "Determination of the Optimal Rotation Age: A Theoretical Analysis." Quarterly Journal of Chinese Forestry, Vol. 13, No. 1 (1980), pages 45-53. In Chinese. Reviews several methods for determining optimal rotation age and analyzes their interrelations.

677. 53 IIIB5 MANCIL ERVIN "Pullboat Logging." Journal of Forest History, Vol. 24, No. 3 (1980), pages 135-141. History of the use of scow-mounted steam skidders (pullboats) to remove logs from southern swamps.

678. 53 IIIB5 NAUTIYAL JAGDISH C., FOWLER KENNETH S. "Optimum Forest Rotation in an Imperfect Stumpage Market." Land Economics, Vol. 56, No. 2 (1980), pages 213-226. Sizeable difference between rotations in regulated and unregulated cases shows that the latter, or traditional forest rotation

determination model, is unsuitable for determining rotations. The difference also suggests that the proposed degree of regulation, and therefore, any existing distribution of age classes, is also a factor that affects the optimal rotation. More research is needed.

679. 53 IIID1 EGGING LOUIS T., BARNEY RICHARD J., THOMPSON RITA P. A Conceptual Framework for Integrating Fire Considerations in Wildland Planning. USDA Forest Service Research Note INT-278 (1980), 11 pages. System for land management planning enabling managers to include and evaluate effects of wildfire or prescribed burning on resources.

680. 53 IIID2 CROW A. BIGLER, SHILLING CHARLES L. "Use of Prescribed Burning to Enhance Southern pine Timber Production." Southern Journal of Applied Forestry, Vol. 4, No. 1 (1980), pages 15-18. Prescribed burning can facilitate regeneration and early stand development, control unwanted vegetation, reduce loss from certain diseases, thin overdense young stands, and make working in an area easier and cheaper.

681. 53 IIID2 VASIEVICH J. MICHAEL "Costs of Hazard-Reduction Burning on Southern National Forests." Southern Journal of Applied Forestry, Vol. 4, No. 1 (1980), pages 12-15. Data from prescribed burning plans of national forests on the southern coastal plain. Estimated costs over a four year period in 1976 dollars ranged from $4.82 per acre for a 50 acre burn in a 12 year rough to $0.35 per acre for a 2,400 acre burn in a 4 year rough.

682. 53 IIID3 DUNLAP THOMAS R. "The Gypsy Moth, A Study in Science and Public Policy." Journal of Forest History, Vol. 24, No. 3 (1980), pages 116-126. History of the introduction, spread, and efforts to control the gypsy moth, one of the three most destructive forest pests in North American history.

683. 53 IIID3 THATCHER ROBERT C. "Latest Developments in Southern Pine Beetle Prevention and Control." Forest Farmer, Vol. 39, No. 9 (1980), pages 16, 22. Better management and close surveillance prevent infestation and minimize damage.

684. 53 IIID3 WATERS WILLIAM E. "Biomonitoring, Assessment, and Prediction in Forest Pest Management Systems." Environmental Biomonitoring, Assessment, Prediction, and Management - Certain Case Studies and Related Quantitative Issues. International Co-operative Publishing House. (1979), pages 77-99. Optimization of the resource management

process depends on the capability to monitor, assess, and forecast pest abundance, activity, and damage and to take appropriate action when justified. Forest pest management model structure developed to show the linkages among major components and the information flows in the system.

685. 53 IIID4 BELASHOV L., VOBALAIA A., ZHARKOVA I. "Evaluation of Economic Damage to Forests Caused by Industrial Waste Gases." Ekon. Sov. Ukr. (1979), pages 57-62 In Russian.

686. 53 IIID4 CANNON WILLIAM N. JR., WORLEY DAVID P. Dutch Elm Disease Control: Performance and Costs. USDA Forest Service Research Paper NE-457. (1980), 8 pages. Municipal programs to suppress Dutch elm disease have had highly variable results and only those municipalities that conducted a high performance program could be expected to retain 75 percent of their elms for more than 20 to 25 years.

687. 53 IIID4 SPEIDEL VON G. "Evaluation Methods for Economic Effects and Regulation of Damage by Game." Forst wissenschaftliches Centralblatt, Vol. 99, No. 2 (1980), pages 76-85. In German with an English Summary. Improvement of inventory methods and rating of damage to the forest by deer. Decrease of net revenue during the time between the occurrence of the damage and final harvest was determined assuming various thinning regimes. Yield table models were applied, varying the proportion of damaged trees to be cut during thinnings. Economic suitability of protective measures against debarking.

688. 53 IIIE BARTUNĚK J. "Prognostic Modelling in Management of a Forest Firm." Acta Universitatis Agriculturae (Brno) Series C (Facultas silviculturae), Vol. 48 (1979), pages 191-208. In Czech, summaries in Russian and German, English abstract. Problems of introducing forecasting into forest concern management using prognostic modelling. Strategic targets of a forest concern which, with respect to time, are a relatively stabile quantity, stand for elements of the forecasting models. Application of the model relies on adequate computer facilities.

689. 53 IIIE DRESS PETER E., FIELD RICHARD C. "Multi-Criterion Decision Methods in Forest Resources Management." In Multiple-Use Management of Forest Resources, Proc. Symp. Clemson Univ. (1979), pages 122-157. Optimization methods customarily used to solve single-criterion problems can be extended to cases where more than one criterion

should be used to evaluate management alternatives. The extension in concept and methods required for addressing multiple criterion problems leads to three classes of solution procedures.

690. 53 IIIE FLICK WARREN A., BOWERS JOHN R., TRENCHI PETER III. "Loblolly Pine Plantations in Southern Highlands: Some Financial Guides." Southern Journal of Applied Forestry, Vol. 4, No. 2 (1980), pages 107-113. Profitability of growing loblolly pine plantations in the Southern Highlands of Alabama, Georgia, and Tennessee. Calculations show before-tax profitability. Effect of professional forestry decisions on profitability.

691. 53 IIIE HOEFLE HANNS H. "Ideas Fundamental to the Conception and Development of Information-Systems." Beiheft zu den Zeitschriften des Schweizerischen Forstvereins, No. 64, Zurich. (1979), 108 pages. In German. Characterizes information in context of a forest enterprise, develops a management-information system and describes its effects on forestry.

692. 53 IIIE KENT BRIAN M. "Linear Programming in Land-Management Planning on National Forests." Journal of Forestry, Vol. 78, No. 8 (1980), pages 469-471. Recent regulations resulting from the National Forest Management Act of 1976 require that each national forest develop a multiple-use land-management plan by the end of 1983. Included in these regulations is a planning process that must be utilized. Linear programming is one analytical aid that can be used in plan development within the context of this process.

693. 53 IIIE KUUSELA K. "Experience Gained from Forest Investments." Economic Review, Kansallis-Osake-Pankki, Finnish For. Res. Inst., Helsinki. No. 2 (1979), pages 3-12. In English. Review of Finnish policy in financing afforestation, timber stand improvement, and forest road construction, including MERA financing program (1965-75) and a 1973-75 project supported by World Bank. Complications in assessment of the economic profitability of investments of this type.

694. 53 IIIE MANN H.J., SCHMID-MOELHOLM J. "How Much Remains Below the Line in Private Forest Enterprises? - Net Returns and Rentability." Der Forst- und Holzwirt, Hannover, No. 14 (1980), pages 273-284. In German. Financial yield tables used to calculate operating results for private forest enterprises in northern Germany.

695. 53 IIIE RAZUMOV V.P. "A Natural and Economic Model of a Forest." Lesnoĭ Zhurnal, No. 2 (1979), pages 3-6. In Russian. Considers (1) forest trees, plants, and environment, (2) forest utilization, protection, and renewal.

696. 53 IIIE RIPKEN H., SPELLMANN H. "Model Calculations of Net Returns from Important Tree Species and from Timber Production in the State Forests of Lower Saxonia." Der Forst- und Holzwirt, Hannover, No. 8 (1980), pages 153-165. In German.

697. 53 IIIE RUPRICH J. "Modelling the Organization of Managerial Activities in Forestry." Acta Universitatis Agriculturae (Brno) - Series C (Facultas silviculturae),48. (1979), pages 157-190. In Czech, summaries in Russian and German, English abstract. Example of the model used in organizing forest units by plants and concerns and in determining the activities for each unit and distributing managerial work to individual units.

698. 53 IIIE SIEBENBUERGER FRANK "Earning Capacity of Important Tree Species in the State Forest Enterprise of Baden-Wuerttemberg, 1977." Der Forst- und Holzwirt, Hannover, No. 3,4 (1980), pages 44-52, 61-66. In German. An appropriate selection of tree species requires consideration of biological aspects, requirements of forest policy, and technical productivity. Earning capacity of tree species is influenced by these factors, and is valuable in decision making.

699. 53 IIIE STRANGE JAMES D., MONTGOMERY ALBERT A. "Advantages of Improved Forest Management Investments for the Timberland Owner." Georgia Forest Research Paper 2, Georgia Forestry Commission Research Division. (1979), 31 pages. Procedures for comparing economic returns from an investment in a bond with investments in various forestry practices.

700. 53 IIIE VON GADOW K., SEYDACK A.H.W. "Classification in Forestry Planning." South African Forestry Journal, No. 111. (1979), pages 39-43. Proposed forestry planning system to meet the demands of multipurpose management for optimal resource utilization of forestry in South Africa.

701. 53 IIIE New Mexico Forest Practices. USDA, Forest Service, New Mexico Forestry Division. (1980), 55 pages.

702. 53 IIIE "Forests and Plans." Allgemeine Forstzeitschrift, Munich No. 23, (1980), pages

599-617. In German. Special issue with several articles concerning detailed forest planning and its connection with regional and state-wide planning.

703. 53 IIIE "Recommendations for the Standardization of Accounting in Forestry." Edited by German Council of Forestry, Bonn (1980), 35 pages. In German. Objective of these recommendations is to improve the business statistics of forest enterprises. Terms are defined and an operation sheet for use by larger forest enterprises is developed.

704. 53 IVA1 VILLASUSO J.M. "Production Functions of Forestry and Wood Processing in Costa Rica." Turrialba, Vol. 29, No. 3 (1979), pages 207-212. In Spanish with an English summary. Timber extraction is still at a stage of increasing returns while sawmilling is at a stage of decreasing returns.

705. 53 IVA1B MCKEEVER DAVID B., HOWARD JAMES L. "1979 World Wood Review." World Wood, Vol. 20, No. 7 (1979), page 33. Review of U.S. forest products industries for 1978.

706. 53 IVA1B RING MERLE E., NOLLEY JEAN W. Maine's Secondary Wood Inventory: A Utilization Summary and Directory. Maine Dept. of Conservation, Bureau of Forestry. (1979), 46 pages.

707. 53 IVA1B RUDERMAN FLORENCE K. Production, Prices, Employment, and Trade in Northwest Forest Industries. USDA Forest Service Pacific Northwest Forest and Range Exp. Stn. (1980), 60 pages. Third quarter 1979. Current information on timber situation in Alaska, Washington, Oregon, California, Montana, Idaho, and British Columbia, including data on lumber and plywood production and prices; timber harvest; employment in forest products industries; international trade in logs, pulpwood, chips, lumber and plywood; log prices in the Pacific Northwest; volume and average prices of stumpage sold by public agencies; and other related items.

708. 53 IVA1B SAMPSON GEORGE R., BETTERS DAVID R., LOVE ROBERT Processing Potential for Insect-Infected Front Range Forests. USDA Forest Service Resource Bulletin RM-1 (1980), 4 pages. Increased timber harvesting by forest industry, resulting in more intensive forest management, would be a means for combating insect problems such as the current mountain pine beetle outbreak. Existing timber processing capacity is far less than potential annual harvest of live timber for Colorado's Front Range.

709. 53 IVA1B WHITE RANDLE V., KEEGAN CHARLES E. III., SETZER THEODORE S. Montana Timber Production and Mill Residues, 1976. USDA Forest Service Resource Bulletin INT-20 (1980), 6 pages. Data on timber production and mill residues by county for the state of Montana. Historical trends in roundwood harvest since 1952, and comparisons of 1976 product output, mill residues and residue use with 1969 estimates.

710. 53 IVA1B The Forest Products Utilization Program in the Northeastern Area. USDA Forest Service (1980), 26 pages.

711. 53 IVA1C CHUNG D.H. "Productivity of Wood-Using Industries in Taiwan." Bulletin of the Experimental Forest of National Taiwan Univ., No. 124 (1979), pages 163-187. In Chinese with an English summary. With the exception of the furniture manufacturing industry and sawmill production, wood using industries in Taiwan would benefit from technical improvements, more capital, and less labor.

712. 53 IVA1C RIVIÈRE CLAUDE, QUENTIN MARCEL Fourteen Successful Firms in the Wood Industry. Dourdan. Ed. Vial (1980), 192 pages. In French.

713. 53 IVA1C TAKAHASHI AKIRA, TANAKA CHIAKI "Recent Trends in the Wood Industry of Japan." Forest Products Journal, Vol. 30, No. 5 (1980), pages 28-34. Japan's wood industry in relation to other industries, trends in wood demand, sources and kinds of imported woods, uses of wood and wood products, and trends in the plywood industry.

714. 53 IVA1C TAKAHASHI AKIRA, TANAKA CHIAKI, SHIOTA YOZO, SCHNIEWIND ARNO P. "Recent Trends in the Wood Industry in Japan." Forest Products Journal, Vol. 30, No. 6 (1980), pages 21-26. Examination of the various branches of the forest products industry, specialized industrial parks for the wood industry, and importance of building construction to the wood industry and the domestic economy.

715. 53 IVA1C ZAKIROV A. "Some Problems in the Formation and Development of Forest-Industry Units." Lesnoĭ Zhurnal. No. 1 (1979), pages 112-115. In Russian. Development and improvement of Soviet forest-industry units: physically and organizationally integrated complexes of logging and conversion enterprises.

716. 53 IVA1C China: Integrated Wood Processing Industries. FAO Forestry Paper 16 (1979), 69 pages. Report on an FAO/UNDP study tour to the People's Republic of

China, August 20 - September 17, 1978, including: raw material supply and production; wood processing plants - history, location and current situation; design and development policy for the integrated wood processing industry; technical descriptions of some wood processing plants; labor and working conditions in integrated wood industries; possibilities for transfer of technology.

717. 53 IVA1D "Roundwood Processing and Demand in South Africa, 1977-78." South Africa, Dept. of Forestry (1979), 47 pages. In English and Afrikaans. One in a series of annual reports giving details of the primary roundwood processing industries, including roundwood input, sales, capital investment, employment, ownership of plants, and value of assets.

718. 53 1VA1E SAID A., KARSTEDT P., SCHARAI-RAD M., PARSA-PAJOUH D. "The Timber Industry of Iran: The Example of the Provincial Capitol of Rasht, on the Caspian Sea." Forstarchiv, Vol. 50, No. 12 (1979), pages 261-265. In German with an English summary. Rasht (pop. 180,000) has the highest concentration of wood industries in Iran. Data from 1975 on: types of enterprises in the city, and their number of employees, wood consumption, capital investment and annual turnover.

719. 53 IVA1E SURYASANOESIPUTRA H., SASTRODIRAHARDJO E. "Development Pattern of Integrated Wood Industries of Perum Perhutani." Duta Rimba. Vol. 4, No. 26 (1978), pages 18-27. In English and Indonesian. General account of the state-owned forest industry in central and E. Java, which converts an increasing proportion of the teak logs produced by the state forest enterprise.

720. 53 1VA1E Forestry and Forest Products Development in Indonesia. An Indicative Analysis of Timber Supply Alternatives in Indonesia. FAO No. FO:INS1 73/012, Working Paper 1 (1978), 43 pages. First report of the Forestry and Forest Products Development Project to evaluate prospects for economic development of the forest sector in different regions of Indonesia. Data on forest resources, transport costs, etc. were used to develop a computerized model of timber supply. Input data and results of a preliminary forecast for the period 1981-2000 are tabulated in appendices. Provinces are identified in which forest industries and/or logging should be expanded and suitable ports listed.

721. 53 1VA4 DEAN W., EVANS D.S. Terms of the Trade: A Handbook for the forest Products Industry. Oregon:

Random Lengths Publications, Inc. (1978), 130 pages. Includes: alphabetical listing of trade terms (mainly softwood) with explanations; commonly used abreviations; illustrations and tabulations for patterns and sizes of panelling and weatherboard, decking and flooring, ceilings and partitions, molding and milling, surfaced lumber, board and plywood footage, and metric conversion factors.

722. 53 IVA4 JOHNSON THOMAS R. LIFO Inventories in the Forest Products Industry. School of Business, Oregon State University (1980), 12 pages. LIFO inventory valuation method can be used for most items in the inventories of a forest products company. LIFO's principal benefit is that it reduces the effect of inflation during periods of rising costs and, therefore, results in lower income taxes. However, it also results in lower reported earnings.

723. 53 IVA4 KEIPI KARI "Approaches for Functionally Decentralized Wood Procurement Planning in a Forest Products Firm." Metsäntutkimus laitoksen julkaisuja 93.4 (1979), 116 pages. Comparison of seven approaches to decentralized wood procurement planning in a Finnish forest products firm.

724. 53 IVB2 KILLIAN HERBERT "Tree-Felling Implements from Instruments of Torture to Burglar's Tools." Centralblatt für das Gesamte Forstwesen, Vol. 97, No. 2 (1980), pages 5-101. In German with an English summary. History (assembled from pictorial documentation) of working methods used in cutting trees. First illustration of the felling of a tree is found in an Egyptian wall-painting of the fifteenth century B.C.

725. 53 IVB4 PATRIC JAMES H. Some Environmental Effects of Cable Logging in Appalachian Forests. USDA Forest Service General Technical Report NE-55. (1980), 29 pages. According to forestry literature, cable logging causes fewer unwanted effects on forest soil, water, residual stands, wildlife, and visual appeal than other harvest systems. Cable logging machinery fully suited to harvesting eastern hardwood forest has not been developed.

726. 53 IVC1C SINCLAIR STEVEN A. "SAWMOD: A Tool for Optimizing Potential Profit from Beetle-Killed Southern Pine Sawtimber." Wood and Fiber, Vol. 12, No. 1 (1980), pages 29-39. SAWMOD (SAWmill decision MODel) is a computer algorithm designed to provide accurate information for decision-making. By using actual lumber grade yields, estimated residue

volumes, current market prices, and readily obtainable production variables, economically optimal processing schemes may be derived from SAWMOD. Structured to be individualized for given sawmills.

727. 53 IVC2A SMYTH J.H., BROWN A. Pulp and Paper Industry Ontario. Environment Canada, Forestry Service (1980), 4 pages. Regional capacity, 1978; paper production by kind, 1970-1977; wood pulp production by kind, 1977; wood utilization pattern of the pulp and paper industry, 1970-1977; principal statistics, 1970-1977; production of pulp and paper products, 1977; export of pulp and paper products, 1977; where Ontario's exported pulp and paper products went, 1977.

728. 53 IVC2A "Australia, Waking Up to Potential." Pulp and Paper International, Vol. 22, No. 6. (1980), pages 61-67. Paper industry in Australia is just beginning to consider exploiting its vast opportunities to become a world power in the pulp and paper industry. Chips are exported on a wide scale and pulp will be a major export within the next ten years.

729. 53 IVC2A Pulp and Paper International, Vol. 22, No. 8 (1980), 140 pages. Annual review 1980. International production, trade data and reports.

730. 53 IVC2C BERTELSON DANIEL F. Southern Pulpwood Production, 1978. USDA Forest Service Resource Bulletin SO-74. (1979), 21 pages. 50.6 million cords, a four percent increase over 1977. Daily pulping capacity at 113 pulpmills rose almost two percent to 103,130 tons.

731. 53 IVC2C BONES JAMES T., BLYTH JAMES E. "Pulpwood Production in the Northeast and North Central States in 1978." Northern Logger and Timber Processor, Vol. 28, No. 5 (1979), pages 16-17. Pulpwood production in the 21 Northeastern and North Central states was 13.2 million cords in 1978, up 3 percent from 1977. Production from residue declined nearly 7 percent while the roundwood harvest rose 6 percent. Greater use of residues for energy may be reducing residue availability, especially in the northern states.

732. 53 IVC4 BILTONEN FRANK E., MATTSON JAMES A., MATSON EDSEL D. The Cost of Debarked Whole-Tree Chips, Stump to Digestor. USDA Forest Service Research Paper NC-174. (1979), 8 pages. Cost analysis of a 60 green ton per hour chip debarking plant predicts a processing cost of $7.58 per dry output ton,

exclusive of raw materials costs.

733. 53 IVC4 GOUGIS J.M. "No, Bark Is Not a Waste Product." Revue Forestière Française, Vol. 31, No. 6 (1979), pages 513-520. In French. Titl listed in English, German, and Spanish.

734. 53 IVC7 OLIVEIRA RONALD A., WHITTAKER GERALD W. An Examination of Dynamic Relationships - and the Lack Thereof - among U.S. Lumber Prices, U.S. Housing Starts, U.S. Log Exports to Japan, and Japanese Housing Starts. Agric. Exp. Stn. Special Report 565, Oregon State Univ. (1979), 34 pages. Dynamic regression techniques used to examine possible interrelationships among the variables named.

735. 53 IVC8 BROOKS DAVID J., FIELD DAVID B. "Potentials of Charcoal Production for Forest Stand Improvement and Domestic Space Heating in Maine." Coop. For. Res. Unit, Res. Bull. No. 1, Univ. of Maine (1979). If charcoal could capture approximately 16 percent of Maine's total domestic space-heating market, then half of the state's standing volume of low-grade hardwood could potentially be used in 20 years. Charcoal production and marketing could pay for the TSI practices necessary to significantly improve the present low quality of hardwood stands. Estimates of raw product sources, volumes and weights; analysis of demand and supply characteristics; marketing considerations.

736. 53 IVC8 EVANS R.S. "Energy Substitution Opportunities in the Canadian Forest Industry." FAO, Geneva. Joint ECE/FO Agric. and Timber Div. (1978), 16 pages. In English with summaries in English and French.

737. 53 IVC8 GARBUTT D.C.F., VAN BREDA P.V. "The Potential in South Africa for Obtaining Fuel from Wood." South African Forestry Journal, No. 111. (1979), pages 54-57. With long-term expansion and sufficient investment capital, the forestry industry could make a substantial contribution to the liquid fuel requirements of South Africa. In the short-term, using surplus roundwood and wood waste, a moderate but significant proportion of liquid fuel requirements could be produced on a sustained basis.

738. 53 IVC8 HECK HANS-DIETER "Wood - the Forgotten Source of Energy." Bild der Wissenschaft, Vol. 17, No. 5 (1980), pages 44-59. In German. In industrialized countries wood has been replaced by more easily handled energy carriers. Recently wood

for energy production has come into discussion again even in industrialized countries - can it efficiently support the easing of the energy balance?

739. 53 IVC8 MALMEBLAD SVEN-ERIK "A Close Look at Sweden's Energy Options." Pulp and Paper International, Vol. 22, No. 7 (1980), pages 51-55. Energy-conscious Sweden has probably generated more data and detailed plans for energy policy than any other country. Current situation and plans for future energy development, aimed at decreasing dependence on oil and exploiting domestic energy sources, including biomass. Substantial improvements are forecast for the paper industry's energy balance.

740. 53 IVC8 PALMER LYNN, MCKUSICK ROBERT, BAILEY MARK Wood and Energy in New England, a Review and Bibliography. USDA Bibliographies and Literature of Agriculture No. 7 (1980), 71 pages. Reviews of fuelwood feasibility studies, fuelwood's role in the national and regional energy situation, wood availability and demand, energy alternatives, and environmental impact.

741. 53 IVC8 PRINS KIT "Energy Derived from Wood in Europe, the USSR, and North America." Unasylva, Vol. 31, No. 123 (1979), pages 26-31. Without far-reaching measures such as allocation of large areas of fertile land to energy plantations, and with the exception of certain forest-rich regions, wood cannot become more than a supplementary source of energy for Europe, the USSR, and North America.

742. 53 IVC8 YOUNGS ROBERT L. Meeting the Energy Demand through Efficient Use of Wood. USDA Forest Service, Forest Products Laboratory. Presented at the 69th Western Forestry Conference of the Western Forestry and Conservation Association, Sacramento, Calif. (1978), 6 pages. Although direct production of energy from wood will be increasingly important in the U.S., indirect conservation of energy through current use of wood as a material is more important. This indirect contribution can become significantly larger than it now is through improvements in utilization technology which will enhance the competitive position of forest products. Many of the possible improvements involve increased use of small stems, low quality hardwoods and dead trees, and thus would enhance silviculture in the US.

743. 53 IVC8 ZERBE JOHN I. "Impacts of Energy Developments on Utilization of Timber in the Northwest." In, The Impact of Change on the

Management of Private Forest Lands in the Northwest. Proc. of Northwest Private Forestry Forum, Oregon. (1978), pages 47-49. Through production of more forest products for use as materials and greater use of wood residue for fuel, the forests of the West can play an increasingly important role in combating US balance of payments problems resulting from imports of foreign oil.

744. 53 IVC8 "Energy Consumption in the Forest Industries of the ECE (Economic Commission for Europe) Region." FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1978), 41 pages. In English with summaries in English and French.

745. 53 IVC8 "Report of the Seminar on Energy Aspects of the Forest Industries, Udine, Italy." FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1978), 14 pages. In English and French.

746. 53 VA1 HUTTUNEN T. "Wood Consumption, Total Drain and Forest Balance in Finland 1977-79." Folia For. 411 (1979), pages 1-47. Part of a series of annual wood statistics published by the Finnish Forest Research Institute. Final statements for 1977 and estimates for 1978 and 1979. Time series for 1960 to the present.

747. 53 VA1 OLLMANN H. "World Production of and Demand for Wooden Sleepers." Forstarchiv, Vol. 50, No. 7/8 (1979), pages 165-168. In German. Tables, based on FAO statistics: production, consumption, export or import of crossties in different countries and regions of the world in 1957, 1967, and 1977. Overall trend has been decline in production and consumption due to reduced demand, competition from concrete and steel crossties. Possible future developments in demand are considered.

748. 53 VA2 FERGUSON I.S. "World and Australian Trends in Wood Consumption." Appita, Vol. 33, No. 5. (1980), pages 324-329. Critical review of recent forecasts of wood consumption. Australia's prospects for future domestic consumption and trade.

749. 53 VB1 ANDERSON WALTER C. "Research in Foreign Trade for Southern Timber Products." In, North America's Forests: Gateway to Opportunity. Proc. Joint Convention of the Soc. of Am. For. and Can. Inst. For. (1978), pages 366-368. Forest economics research can no longer ignore foreign trade, especially in the U.S. South, which is one of the few remaining wood surplus regions in the world. World-wide demands for solid wood products and pulp

and paper are expected to increase substantially in coming years.

750. 53 VB1 DARR DAVID R., LINDELL GARY R. "Prospects for U.S. Trade in Timber Products." Forest Products Journal, Vol. 30, No. 4 (1980), pages 16-20. Second paper in a series of four examining U.S. trade prospects and their implications to the year 2030. After 2000, the ability of the U.S. to increase and perhaps maintain imports of timber products will depend on the willingness and ability of other countries to manage their timber resources more intensively. Over the next 2 decades, Western Europe and Japan will tend to be more competitive for Canadian and Southeast Asian supplies of both solid and fiber-base products.

751. 53 VB1 DARR DAVID R., LINDELL GARY R. "Prospects for U.S. Trade in Timber Products." Forest Products Journal, Vol. 31, No. 5 (1980), pages 21-27. Third paper in a series of four examining U.S. trade prospects and their implications to the year 2030. Exports of solid wood products are expected to expand until 1990 and then gradually decline. Exports of pulpwood and chips are expected to decline slowly after peaking in 1990, woodpulp, paper, and paperboard should rise slowly throughout the projection period.

752. 53 VB1 DARR DAVID R., LINDELL GARY R. "Prospects for US Trade in Timber Products." Forest Products Journal, Vol. 30, No. 6 (1980), pages 16-20. Fourth paper in a series of four examining US trade prospects and their implications to the year 2030. Although unique trade policy situations may develop over time, projections of trade and domestic markets suggest that domestic rather than foreign supply and demand conditions increasingly will determine prices, employment, and other market characteristics usually considered critical for trade policy formulation. Prices for timber products in the US are projected to continue to increase, thereby continuing interest in expanding domestic timber supplies. The condition of the domestic timber resource will tend to become especially important after 2000 when the ability of import sources to expand supplies becomes more uncertain.

753. 53 VB1 GARDINER JOHN J. "Future Markets for Irish Wood Products." Irish Forestry, Vol. 37, No. 1 (1980), pages 23-30. Users of small roundwood have all experienced very difficult market conditions over the past few years. However, there are indications that these difficulties are now easing

and that the markets for processed wood products are set for renewed growth.

754. 53 VB1 GHIGLIA E. Direction of Trade in Forest Products. Sample Years, 1953 to 1976. FAO, Rome, Forestry dept. (1978), 98 pages.

755. 53 VB1 TULOUP A. "External Trade in Wood and Wood-based Products." Revue Forestière Française, Vol. 31, No. 4 (1979), pages 323-353. In French with author and title listed in English, German, and Spanish.

756. 53 VB1 WINDHORST P.W. "The Southeastern USA: Is It Really a Region of Growing Importance for the Export of Wood Poducts?" Forstarchiv, Vol. 50, No. 11 (1979), pages 240-245. In German with an English abstract. Development of forests and associated industries in the region in relation to changes in land-use patterns following the decline in agriculture since the 1940s. Shortage of pine timber for mills in the region is predicted in the next 10-20 years because of failure by private owners to regenerate sufficient pine after felling the secondary forests. Present increase in the wood-processing industry can probably maintain a growing export volume in the short term, but exports will probably decline in the longer term. Economic problems are predicted unless the wood-processing industry can adapt to using more hardwood.

757. 53 VB3 CALLAHAN JOHN C., TOTH JOHN M., O'LEARY JOSEPH T. The Timber Marketing process in Indiana. USDA Forest Service Research Paper NC-177. (1979), 7 pages. Examines the sale experience of 159 woodland owners who had recently sold timber.

758. 53 VB3 HAYNES RICHARD W. Competition for National Forest Timber in the Northern, Pacific Southwest, and Pacific Northwest Regions. USLA Forest Service Research Paper PNW-266 (1980), 72 pages. Impacts of sealed bidding and the Small Business Set-Aside Program vary widely among appraisal zones. Little indication of collusion in noncompetitive sales.

759. 53 VB3 HAYNES RICHARD W. "Sealed Bidding and Activity of Outside Bidders for National Forest Timber." Journal of Forestry, Vol. 78, No. 6 (1980), pages 344-346. Activity of outside bidders increased in western Washington and western Oregon during the first nine months of 1977, when the National Forest Management Act made sealed bidding the prevalent form of timber sale. Participation of

outside bidders increased the prices over those received under localized patterns of oral bidding during the period from July 1974 through June 1976.

760. 53 VB4 VALTONEN K. End-Use Information for Marketing in Sawmill and Woodbased Panel Industries. Folia Forestalia, No. 391 (1979), 26 pages. In Finnish with an English summary. Types of end-use information on wood products and how it is being used in marketing, planning, and management in sawmill and woodbased panel industries. Methods for classifying end-use data and for conducting practical end-use studies that meet the needs of users of this information.

761. 53 VB4 ZIMMER D. Wood as a Material for Building=Its Share of the Market. Geneva: La Forêt (1979), 3 pages. In French. Figures drawn from a statistical study performed by an architecture agency in Switzerland.

762. 53 VB6 SCHULER ALBERT T., WALLIN WALTER B. An Econometric Model of the U.S. Pallet Market. USDA Forest Service Research Paper NE-449 (1979), 11 pages. Demand was affected by real pallet price, industrial and food production levels, and slipsheet prices. Supply was affected by real price, housing starts, and productivity within the pallet industry. Consumption and price projections were developed to illustrate the model's use for providing long-term investment and resource planning information.

763. 53 VB6 SCHULER ALBERT T., WALLIN WALTER B. "Report on an Econometric Model for Domestic Pallet Markets." Forest Products Journal, Vol. 30, No. 7 (1980), pages 27-29. Investment and market planning by the pallet industry can benefit from quantitative market information in the form of demand-supply models and price and consumption projections. Estimates of future demand are also needed by forest resource planners to evaluate current forest programs, establish timber growth goals, and aid in formulating forest policies and proposed programs. With an econometric model of the aggregate US pallet market, demand is found to be affected by pallet price, industrial and food production, and the relation of pallet price to wage rates for laborers in materials handling. Supply is affected by pallet price, hardwood lumber prices, and pallet manufacturing labor costs.

764. 53 VC3 BUONGIORNO JOSEPH, GILLESS JAMES K. "Effects of Input Costs, Economies of Scale, and Technological Change on International Pulp and Paper Prices."

Forest Science, Vol. 26, No. 2 (1980), pages 261-275. A theory of price formation which rests on the assumption of a generalized Cobb-Douglas production function, coupled with monopolistic competition in international markets, and cost-minimizing behavior on the part of producers. Resulting price equations were estimated for wood pulp, paper and paperboard, and their major components, using data from eighteen OECD countries observed from 1961 to 1976.

SUBJECT INDEX

This index is best used in conjunction with the Subject-matter Classification Scheme at the front of this issue. For example, if the user enters the index at Administration, forest, he is referred to Section III of the bibliography, because to be more specific would require subdividing the topic essentially as the Classification Scheme does. The user's next step is to turn to the Scheme, where he finds that forest administration in general is IIIA1, administration pertaining to forest roads is IIIC, and so on.

CUMULATIVE AUTHOR INDEX

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